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ARTICLE V.

RAILROADS IN FRANCE.

SINCE the publication of our late article on the subject of the railroads in France, and of those which are projected, the Minister of Public Works, M. Teste, has brought into the Chamber of Deputies the *projet* of a law, for undertaking a system of railroads in conformity with the principle there briefly stated. As it is a plan novel in its character, and one which, if carried into execution, will introduce a system of public improvements of great national importance, we here give the *projet* in extenso :

“ CHAPTER 1. — Art. 1. There shall be established a system of railroads leaving Paris, and leading to the frontier of Belgium, by Lille and Valenciennes, — to England, by a point of the coast of the Channel, which shall be determined hereafter, — to the frontier of Germany, by Strasburg, — to the Mediterranean, by Lyons, Marseilles, and Cette, — to the Ocean, by Bordeaux and Nantes.

“ Art. 2. The execution of the grand lines of railway enumerated in the preceding article, shall be performed by the coöperation of the state, of the departments, and communes interested in them, and of private industry, in the proportions and forms to be hereafter resolved upon.

“ Art. 3. Independently of the voluntary grants which may be offered by localities, and accepted by the government, the indemnity for lands and buildings, the occupation of which may be necessary for the establishment of railways and their dependencies, shall be paid to the amount of two-thirds by the departments and communes interested in

them. In each department through which a railroad shall pass, the council-general shall determine the amount to be chargeable upon the departmental funds; it shall designate the communes to be called upon for payment of the surplus of the two-thirds, and fix the contingent of each according to its interests and its financial resources.

"Art. 4. The remaining third of the indemnity, and the excavations and banking, and the works of art, shall be paid by the funds of the state.

"Art. 5. The rails, including the sand, the *matériel*, the expenses of working the line, and the expense of keeping up and repairing the roads, its dependencies, and its *matériel*, shall be at the charge of the companies, to which the working of the railway shall be let on lease. This lease shall be granted upon a *cahier des charges*, (clauses and conditions,) which shall fix the duration of the period and the tariff of fares. The *cahiers des charges* must be approved of by royal ordonnance.

"Art. 6. At the expiration of the lease, the value of the rails and of the *matériel* (carriages, locomotives, &c.) shall be reimbursed, according to appraisal, to the company, by that which shall succeed it.

"Art. 7. For the regulation of the indemnities for lands, and buildings, the formalities prescribed by Articles 23, 24, 25, 26, 27, and 28, of the law of the 3d of May, 1841, shall be dispensed with. The estimation of the lands and buildings, comprised in the judgment of expropriation, shall be immediately referred to a jury. Immediately after the decision of the jury, the government shall be put into possession of the lands and buildings which are expropriated, on payment of the third of the amount of the indemnity to be borne by the state.

"Art. 8. The measures which may be necessary to conciliate the working of the railways with the execution of the laws and regulations of customs, shall be regulated by royal ordonnance.

"Art. 9. The measures and arrangements necessary for the good regulation, safety, use, and preservation of the railways and their dependencies, shall be fixed by the government.

"CHAPTER 2. — Art. 10. A sum of forty-three millions is appropriated to the establishment of the railway from Paris to Lille and Valenciennes, by Amiens, Arras, and Douai.

"Art. 11. — A sum of forty-one millions is appropriated to the portions of the railway from Paris to the Mediterranean, comprised, one between Dijon and Châlons, the other between Marseilles, Avignon, and Beaucaire.

"Art. 12. A sum of seventeen millions is appropriated to the establishment of the portion of the railway from Paris to the Ocean, comprised between Orleans and Tours.

"Art. 13. A sum of fifteen hundred thousand francs is appropriated to the completion of the plans and surveys of the great lines of railways, defined by article 1, of the present law.

"Art. 14. On the appropriations mentioned in the preceding arti-

cles, amounting together to one hundred and two millions five hundred thousand francs, there is opened to the Minister of Public Works on the estimates of the year 1842, a credit of eleven millions, namely: for the railroad from Paris to the Belgian frontier, four millions; for the portions of the railroad from Paris to the Mediterranean, between Dijon and Châlons, and between Marseilles, Avignon, and Beaucaire, four millions; for the portion of the railway from Paris to the Ocean between Orleans and Tours, two millions; for the continuation of the plans and surveys, one million. And upon the estimates of 1843 a credit of twenty-two millions five hundred thousand francs, viz.: Paris to the Belgian frontier, eight millions; Paris to the Mediterranean, eight millions; Paris to the Ocean, six millions; and for the continuation of the surveys and plans, five hundred thousand francs. Total for 1842 and 1843, 22,500,000 francs.

"CHAPTER 3. WAYS AND MEANS. — Art. 15. The portion of the expenditure authorized by the present law, which is to fall upon the state, shall be provided for provisionally out of the resources of the floating debt; the advances of the treasury shall be definitively covered by the consolidation of the funds of reserve of the sinking fund, which may be disposable after the extinction of the deficits of the budget of 1840, 1841, and 1842.

"CHAPTER 4. — Art. 16. Every year there shall be rendered to the Chamber, by the Minister of Public Works, a special account of the works executed by virtue of the present law."

This *projet*, which is not yet adopted by the legislative chambers, proposes for future execution the great lines of railroad described in our former article, and it recommends a plan of building and carrying on these works, by the joint action of the general government, the local authorities, and private companies. The Minister, in his *exposé des motifs*, proceeded to describe more in detail the portions of the several works proposed to be first undertaken, and to give some estimates of the cost. The whole extent of the lines of railway proposed is about 2,350 kilometres, or 1,460 miles, and the cost of the portion of the work proposed to be undertaken by the state, is estimated at an average of 150,000 francs per kilometre, or \$46,000 a mile.

The railroad from Paris to the Belgian frontier, and on the shortest route to England, the Minister remarks, was always considered of the greatest importance. To create easy and rapid relations between Paris, Brussels, and London, he considered important not merely to the commercial, but to the political interests of the three kingdoms. Two principal routes had been indicated, one by way of Amiens, and the other by St. Quentin. The population of each of these towns, claimed the preference in its own favor. The government had given the preference to that of Amiens. It is four leagues shorter than the

other ; it avoids 1,600 metres of tunnelling, and it is at present destitute of the advantage which the other possesses of water-communication, and will consequently be more decidedly benefited by the new improvement. The population on the line of Amiens is also more numerous. In making this preference, they propose also to favor the establishment of a branch leading to Compeigne.

The line adopted by the government takes its departure from Paris at a place between the barrier St. Denis, and the barrier Poisonnière, proceeds thence to St. Denis, passes the valley of Montmorency, to the hill of Pierrelaye, reaches the river Oise near Pontoise, and pursues the course of the river to Creil ; it thence pursues the valleys of the Bresche and the Avre, to the summit which separates the valley of the Oise from that of the Somme, and reaches the Somme near Amiens, following the valley of the Avre. Thence the route proceeds to Arras, and thence upon Douai, following the valley of the Scarpe, and from Douai it divides into two branches, one of which proceeds towards Lille, and the other upon Valenciennes. The length of the route from Paris to Creil is 40 3-4 miles ; thence to Amiens, 48 miles ; and thence to Lille, 70 7-8 miles. From Douai to Valenciennes is 19 miles, making a whole length of railway, including the branches, of 178 3-4 miles. The maximum grade does not exceed an ascent of 3-1000th parts, or 15 3-6 feet per mile. The estimate of 150,000 francs the kilometre is considered rather above than below the actual cost, of the part which it is proposed shall be done at the charge of the state, so that the cost of execution from Paris to Lille and Valenciennes will not exceed 43,000,000.

The next portion of railway proposed to be immediately undertaken, extends from Orleans to Tours. This route is destined to make a part of the route from Paris to Bordeaux, and also to Nantes. The railroad from Paris to Orleans is already in the progress of construction by a private company. The preoccupation of this route, to a distance of 60 leagues from the capital, the Minister remarks, will be of immense advantage for the relations of Paris with the country, at the west and southwest, as a part of the grand chain of communication both with Bordeaux and with Nantes. It is expected that the company which has undertaken the construction of the railroad from Paris to Orleans, will bring that work to a completion in about a year.

The route from Orleans pursues the valley of the Loire, the greater part of the way on the right bank, passing through the towns of Mer, and Blois ; but before reaching Tours, it crosses the river near Amboise, and enters Tours at the point where the royal road to Bordeaux leaves the town. The distance is 70 3-4 miles, and the maximum grade is 13 feet in a mile. The estimated charge to the

government is 17,000,000 francs. The sums demanded for 1842 will be 3,000,000, and for 1843, 5,000,000.

One of the lines, which will necessarily occupy the first rank in the system of railroads of France, is that from Paris to Lyons. The Minister of Public Works, in stating the motives for the construction of this line, remarks that Lyons is the second town in the kingdom, not only in its population, but in the extent of its industry; the products of which are exported to every part of the civilized world, and form especially one of the most considerable objects of French commerce with the United States. The railroad will place Lyons within 12 or 15 hours' travel from Paris, and 18 or 20 hours' from the sea, and will thus be one of the most powerful means of multiplying the transactions of that port with foreign nations.

There are two routes between Paris and Lyons: one by way of Burgundy, and the other by the valley of the Loire. But the Minister gives a preference for the railroad to the former, not only on account of the less formidable physical obstacles to be overcome, but on account of the greater population, who will derive an immediate benefit from it. In making a selection of the route by Burgundy, there is still some difficulty of choice in the precise route; but all the lines unite at Dijon. From that point, therefore, it will be safe to begin with the construction of the railroad, and to carry it thence to Chalons. From the latter place there is a very active steam navigation connecting it with Lyons. It is, therefore, proposed to begin the construction of the railroad on this section from Dijon to Chalons, a distance of 45 miles. The expense proposed to be defrayed by the state, is estimated at 11,000,000 francs, of which 1,150,000 will be required in 1842, and 3,000,000 in 1843.

A part of the projected system of works, which is considered among the most useful, is one designed to unite Lyons with a port on the Mediterranean. The port of Marseilles, from its admirable position, commands a great part of the commerce of the Levant, destined not only for France, but for Switzerland and Northern Germany. The port of Cette participates in these advantages. To prevent these ports from being deprived of these advantages, it is necessary to take some measures to enable them to meet the competition with other channels of trade. Several foreign nations are desirous of rivalling France in this trade. In particular Austria, by the works which she is constructing, for uniting the centre of the empire with the Mediterranean, will cut off from these ports a great part of this trade, unless something is done to retain it. Not less than 250,000 to 300,000 tons of merchandise and 300,000 passengers, are now annually transported between Marseilles and Lyons. This traffic will be greatly extended, when the passage shall be reduced from 36 or 40 hours to

10. It is thought that the trade of Marseilles, from the advantages of its position, is susceptible of a great extension by the aid of an improved communication with the interior, including the extension of the railroad, by the proposed branch from Dijon to Strasburgh.

Four different lines have been surveyed between Marseilles and Avignon and Beaucaire, on the Rhine, whence the navigation is good for steamboats to Lyons, and even to Chalons. The shortest of these lines, running in nearly a direct course from Marseilles to Avignon, is that to which the council, on examination of the several surveys, have given the preference, on the ground of the saving of distance, although liable to the objection of not passing through the towns of Arles and Beaucaire. The length of this route is 96 1-2 kilometres, or 60 miles; and the estimated charge, for the part of the work to be undertaken by the state, is 30,000,000 francs, of which they propose that 2,500,000 shall be appropriated in 1842, and 5,000,000 in 1843. It will be perceived, that this estimate is more than double, according to distance, that of the other lines. This greater estimate arises from the difficulty of the country, and particularly the extent of the tunnelling. There will be 10 tunnels on the proposed route, measuring in all 10,213 metres, or 6 1-3 miles. One of these proposed tunnels will be 3,819 metres, and another 2,815 metres in length. If executed on this plan, more than a tenth part of the whole route between Marseilles and Avignon will be under ground. The highest grade on the line is 5-1000ths, or 26.4 feet per mile. The policy of admitting such a proportion of subterranean road is quite at variance with the general practice in this country, and it seems to be of questionable expediency. Tunnels on railroads are liable to very great objections, not only on account of their great cost, and the hazard of finding the earth where they are attempted impracticable, or of a nature to interpose very great difficulties in the construction, but on account of the difficulty and cost of lighting and ventilation, and the perpetual nuisance, from the smoke, dampness, and darkness, which are inseparable from tunnels of great length. So serious are these objections, that it seems desirable to avoid them, if no saving in cost be practicable, at the sacrifice of much steeper grades for preserving a line upon the surface of the earth, or so near to the surface that it may be attained by means of an open cutting. Most European engineers appear to have acted under an excessive dread of high grades and of curves. It is not to be denied that steep grades, and curvatures of any kind, are blemishes in railroads. But ample experience on the railroads in Massachusetts proves that occasional ascents and descents, not exceeding one in 200, in their effect on the passenger transport and the ordinary traffic, produce hardly a perceptible effect on the rapidity of the trains, or the cost of motive

power; and that the slight inconveniences which may result from these grades are fully counterbalanced by the greater facility of draining through deep cuts, afforded by the descent. It is found, moreover, that inclinations of more than twice the rate above named are attended with much slighter inconveniences than had been apprehended. They involve a slight increase of expense, from the necessity of using heavier locomotive engines, and consequently a greater expenditure of fuel; but this objection is trivial in comparison with the nuisances produced by the noxious atmosphere of extensive tunnels. So also experience shows, that curves in the track of a railway, of no shorter radius than 1,500 to 2,500 feet, are attended with much less serious inconvenience or injury, than had been apprehended; and the necessity of submitting to such degrees of curvature, attended with grades not exceeding the rates above mentioned, as the alternative for avoiding an extensive line of tunnel, especially on a railway designed chiefly for the transport of travellers, should not prevent a preference being given to an open, over a subterranean railroad.

It cannot, of course, be determined, without a knowledge of the ground, whether on a given line of railroad any number of proposed tunnels might be dispensed with, by a different choice of the line, and by admitting of increased rates of grade and greater degrees of curvature for the purpose of surmounting, instead of penetrating through the summits which intercept the track; but it seems not improbable, that of the 10 tunnels, and the 6 1-2 miles of subterraneous track above proposed, some part at least might be dispensed with, by a greater deviation than has been proposed from the ideal perfection of a level and straight road. We the more readily adopt this opinion, from observing that in the *exposé* of the Minister of Public Works, from which the above statements are taken, it is in no case proposed to adopt a greater degree of inclination than one in 200, and rarely greater than one in 333. It seems not improbable, that by adopting a wider limit for the maximum grade on the several lines, a very material saving of expense might be made, with a slight depreciation in the actual utility of the road.

In addition to the lines of railway described in the foregoing *projet*, and recommended by the Minister of Public Works, he subsequently came to the resolution of recommending still another line. The inhabitants of the departments at the east of Paris strongly pressed their claim for a direct line to Strasburgh, by way of the Marne, Bar le Duc, and Nancy. The councils of the departments, and the principal bodies of the principal towns on the route, came forward and voted their full share of contribution to the work. The Minister, in consequence, recommended an addition to the *projet*, authorizing the immediate commencement of a railroad on this route, beginning with

the portion of it from Bar le Duc to Nancy, and leaving the residue to be definitively designated according to the result of further investigations. The *projet* was under consideration in the Chamber of Deputies, at the date of the latest newspapers received from France.

ARTICLE VI.

INTERNAL IMPROVEMENTS OF PENNSYLVANIA.

IN the notice of the improvements in Pennsylvania in the last Number, [p. 99,] it was remarked, that the system of works was deficient in not providing the best line of communication for the rapid and cheap transport of passengers and goods from Philadelphia to the Ohio River. It has been for some years past an object of serious inquiry, in what mode this deficiency may be best supplied. It seems to be admitted, that the end cannot be attained but by an entirely new work, extending from Harrisburgh to Pittsburgh. The objections to this undertaking, independently of the difficulty of commanding the necessary means for so costly a work in the present state of the public finances, are its great cost, and its inevitable effect of destroying the value and productiveness of the works already constructed, between the same points, at so heavy an expense to the state. The two sections of the canal, together with the Portage Railroad, have caused an expenditure of about \$10,000,000, which works would be in a great measure superseded, by the construction of such a railroad as the face of country seems to admit of, between the two extremities of the route.

A third Report of Charles L. Schlatter, principal engineer in the service of Pennsylvania, on the subject of a continuous railroad from Harrisburgh to Pittsburgh, has been lately printed by order of the legislature. This report, with those which have preceded it, contains the results of long continued and very elaborate investigations for ascertaining the best route for a railroad adapted to the purpose above stated. Reports are given of surveys and estimates of three distinct routes, called the *Northern*, *Southern*, and *Middle* routes. The engineer gives the preference, on very good grounds, to the middle route; it being not only the shortest of the three, but admits of being constructed with a less maximum grade, and a less aggregate amount of ascent and descent, than either of the others. The length of the northern route is 320 1-2 miles, that of the southern 291 1-2,

and of the middle 229 1-2. By this last route, the distance from Philadelphia to Pittsburgh, including the Columbia road to Lancaster, with the Lancaster and Harrisburgh Railroad, would be 337 miles, in place of 395 miles, the length of the present line of railroads and canals.

The general course of this route is for the most part nearly direct. After pursuing the east branch of the Susquehanna for nearly five miles above Harrisburgh, it crosses the river, and proceeds thence along the right bank, until it meets the Juniata, and thence along the right bank of that river to a point two and a half miles below Lewis-town. It there crosses the Juniata, and pursuing the valley of the Kishacoquillas Creek for a distance of about eight miles, thence in a northwesterly direction to the Stone Mountain, the slope of which it ascends gradually for some distance, and then penetrates it by a tunnel of 1866 yards in length. Thence the line crosses the head waters of Stone Creek, and descending the valley of Shaver's Creek, and the southern slope of Tussey's Mountain to the Little Juniata, it follows the valley of that river to Logan's Narrows, where it begins to ascend the Alleghany Mountain. After an ascent of 32 miles, at a grade not exceeding 45 feet in a mile, it reaches the summit at an elevation of 2,183 feet above the level of the sea. At a distance of ten miles it crosses another summit, and thence descends the western slope of the mountain, somewhat less steep, a distance of 39 miles, to Black Lick Creek, near Ebensburg. It thence follows this creek to its junction with the Connemaugh River, and after crossing this river near Blairsville, it proceeds in nearly a direct course to Pittsburgh. The length of this line, as above stated, is 229 1-2 miles; the aggregate ascent 3,058 feet; the descent 2,631 feet; the elevation at the termination at Pittsburgh being 755 feet above tidewater; the maximum grade 45 feet; and the estimated cost of construction for a road graded for a double track, with a single track laid down, \$9,496,709. This estimate includes no allowance for locomotive engines and cars. The elevation of the grade of the proposed tunnel through the Stone Mountain is 1,065 feet above tide-water, and 765 feet below the crest of the mountain.

The route appears to be a highly eligible one, for so mountainous a region, and more direct than could have been expected to be found practicable. The grades are not too steep to admit of rapid travelling with safety, by passenger trains, and the maximum corresponds with that of the Columbia and Harrisburgh Railroads. The cost, however, is so great as to forbid the idea of the work being undertaken in the present condition of the finances of the State.

M I S C E L L A N Y .

EXPEDITION TO THE NIGER.

IN the latter part of the year 1839, the British Government came to the resolution of taking a vigorous step for the suppression of the traffic in slaves in Africa, by measures designed to operate directly on the native chiefs, who are instrumental in promoting it. For this purpose it was resolved to send an expedition to the River Niger, with commissioners empowered to open a direct negotiation with the negro chiefs, for abolishing this inhuman trade within their respective dominions, and for establishing commercial relations with them. The plan of this expedition having been matured, a contract was made with Messrs. Laird of Liverpool, to build three iron steam vessels, to be strong, but of light draught, and adapted for river navigation, and to be furnished with every improvement which experience had suggested for securing their efficiency and the health of their crews.

These vessels were launched in September, namely, the *Albert* and *Wilberforce*, each 136 feet in length, of 27 feet breadth of beam, drawing 5 feet 9 inches water when loaded, and of 440 tons burthen; and the *Soudan*, 110 feet in length, 22 in width, 250 tons burthen, and drawing 4 feet water. The two larger vessels were furnished with two engines each, of 35-horse power, and the other with one engine of the same size. The larger vessels were capable of carrying coals sufficient for 15 days' use, working 12 hours per day; and the other for 10 days. They were equipped with every thing necessary for the service, and provided with an ample supply of provisions, including preserved meats, and with an extra supply of medicines, agricultural implements, and other articles for the use of the natives. They were provided with ventilating tubes, for producing a free circulation of fresh air between decks, and with various other improvements, for the preservation of the health of those on board. They were in readiness for departure in April, 1841.

The command of the expedition was given to Capt. H. D. Trotter of the Royal Navy, who had distinguished himself in putting down the slave trade, when in command of the *Curlew*, on the coast of Africa, in 1837. The command of the second vessel, the *Wilberforce*, was given to Captain William Allen, the companion of Lander in his last voyage; and that of the *Soudan* to Captain Bird Allen, who had been long engaged in the surveying service in the West Indies. There were four lieutenants, and a large number of subordinate officers, with 110 seamen, marines, and stokers, many of whom were natives of Africa.

Besides being thus manned, the expedition was directed to stop at Sierra Leone, and there take on board interpreters, and also 120 Kroomen, to do the work requiring exposure, wooding, watering, &c., and men acquainted with agricultural operations, to be employed in establishing a model farm.

The three commanders, together with Captain Cook, were appointed commissioners, with authority to make treaties with the native chiefs, for carrying out the objects of the expedition. For the accomplishment of other objects connected with the expedition, a committee of the African Civilization Society engaged individuals eminent for their skill in every department of natural history, to accompany it. As botanist, Dr. Vogee, acting director of the botanic garden at Bonn, was engaged; as geologist, Dr. Stanger; and as naturalist, Mr. Frazer. A skilful gardener and seedsman was also employed, and a draughtsman, to delineate objects of natural history which should be of too delicate a nature to be preserved, and to furnish sketches of scenery, with the peculiar features of the native tribes with whom they should open an intercourse. Vocabularies were prepared, with the assistance of the most competent persons, of the languages which would be likely to be met with, which were printed in the most convenient form of reference, with a series of the most useful questions.

The expedition, after being detained a fortnight in the English Channel by contrary winds, made a successful voyage to the African coast, touching at Madeira and at Porto Grande, in St. Vincent, one of the Cape de Verds. The *Albert* made her passage from Plymouth to Madeira in eight and a half days, and all the steamers proved to be very good sea vessels, capable of being operated either with or without steam. They took in their reinforcements at Sierra Leone, where, as well as at the other ports, they were detained beyond their calculation, and touching at Monserado, proceeded to Cape Coast Castle, where they arrived on the 15th, 19th, and 24th of July. Here they replenished their coals and provision from a store-ship sent thither to meet them, and proceeded to the River Nun, one of the mouths of the Niger. Every thing thus far succeeded according to their desire, and they arrived at the river in due season to take advantage of the most favorable state of the navigation for large vessels.

On the 20th of August, the vessels of the expedition commenced the ascent of the river, having passed safely over the bar six days previously. This delay was occasioned by the necessity they were under of repairing what is technically termed "the tails" of their rudders, which had been damaged during their passage from Accra to the mouth of the stream. On the 26th, they anchored opposite to Eboe, a place situate at the upper angle of the Delta, and distant 120 miles from the sea. Thus far no case of sickness had occurred amongst the Europeans, which did not immediately yield to medical treatment. The weather was remarkably favorable, the thermometer ranging from 74 degrees to 84 degrees, with a clear sky and occasional refreshing showers.

After receiving a visit from Obi, the King of Eboe, on which occasion a treaty was concluded with him for the total abolition of the slave trade and human sacrifices, the expedition proceeded on its course, arriving at Iddah, 100 miles higher up, on the 2d of September. Here, for the first time, the African fever broke out amongst the crew with violence, commencing on board the *Albert*, and rapidly spreading to the *Wilberforce* and the *Soudan*. Captain Trotter, however, considered it his duty still to persevere. In this resolve it is some comfort to know that the other officers of the squadron fully concurred. Accordingly, after the ratification of a treaty similar to the one already described, with the Attah (King) of Iddah, and the purchase from him of a piece of land, to be chosen higher up the stream, for the establishment of a model farm, (the selection of which was left to the commissioners, the three commanders, and Mr. Cook,) the vessels ascended to the confluence of the Niger and the Chadda, 270 miles above the sea. This they reached on the 11th of September. A tract of land having been fixed on, not far from this point, for the farm, and having been duly made over by accredited agents of the Attah, the stores were landed, and the persons originally appointed to the office left in charge of them. In the mean time disease continued its afflicting ravages. To such an extent, indeed, did it spread, that on the 19th it was resolved to put the sick, now amounting to forty-six, on board the *Soudan*, and to despatch her to the sea. Lieutenant Fishbourne, of the *Albert*, was placed in charge of her, while her commander, Captain B. Allen, removed on board the *Albert*. With regard to the *Soudan* we need only further remark, that at the mouth of the river she happily fell in with Her Majesty's steamer *Dolphin*, to which the sufferers were transferred, and which proceeded with them direct to the Island of Ascension, while the *Soudan* continued her course to Fernando Po. Meanwhile it was determined by the commanders of the vessels still up the river to prosecute their voyage, the *Wilberforce* ascending the Chadda, and the *Albert* the Niger. The particulars thus far recounted have, by scraps, been for the most part before the public for the last three weeks. It seems necessary, however, briefly to recapitulate them, in order to a perfect understanding of the remainder of this sad narrative. By sunset on the evening of the 19th, (the day on which the *Soudan* sailed from the confluence,) several entirely new cases of fever had broken out on board the *Wilberforce*; the history of which vessel, now about to be separated from her consort, we shall take up first. Amongst these were her commander, Captain William Allen, her master, and purser; also the botanist and the mineralogist, attached to the expedition. To ascend the Chadda under these circumstances would, of course, have been madness; to stay at the confluence but little less. No alternative remained except that of turning the vessel's head down the stream, and following in the track of the *Soudan*. Accordingly immediate preparations were made for carrying into effect this new change of plan, and on the morning of the 21st the *Wilberforce* began her downward voyage, having previously taken on board

sundry fresh patients from the *Albert*. Owing to various stoppages occasioned by the necessity of procuring supplies of wood, a duty of peculiar difficulty in the weak-handed condition of the vessel, she did not reach the open sea until the 29th. On the morning of the 3d of October, however, by the blessing of Almighty God, she anchored safely in the port of Clarence, Fernando Po. During her passage to the mouth of the river she lost her purser, Mr. Wakeham, and after her arrival at Clarence, Mr. Harvey, the master of the *Albert*, and Mr. Collman, assistant-surgeon of the Soudan. Here it affords us the greatest pleasure to record an instance of that noble generosity which we trust and believe marks the character of the British merchant and the British sailor. Mr. Jamieson, of Liverpool, the owner of several vessels trading on the western coast of Africa, had sent out instructions to the ship-masters in his employ to render all the assistance in their power to the officers and crews of the Niger expedition. Accordingly, on the 6th of October, the *Ethiope* steamer, one of the vessels alluded to, made her appearance at Fernando Po, and her commander, Mr. Becroft, at the solicitation of Captain William Allen, instantly turned his vessel's head towards the Niger, with an intent to ascend in search of the *Albert*, and render her any assistance she might appear to require.

On the 9th, the *Wilberforce* again weighed anchor and set sail for Ascension, where she arrived after a tedious passage of more than five weeks, on the 17th of November. During the former part of this passage she was accompanied by Her Majesty's steamer *Pluto*, which, in various ways, rendered her effective assistance. The last accounts received from the *Wilberforce* convey the gratifying intelligence that the fever appeared to have been almost subdued, for that no serious case of illness remained on board.

We now return to the *Albert*, which we left on the eve of her departure from the confluence to ascend the Niger. This, as we have already said, was on the 21st of September. On the 28th she arrived at Egga, situate between 50 and 60 miles above the junction of the Chadda, and 320 from the sea. During this short passage she lost two of her seamen, whilst several others were taken ill; nor did the officers escape; Captain Bird Allen was attacked within four hours after the departure of the *Wilberforce*, and Captain Trotter himself, whilst the vessel lay at Egga. At this place the Kroomen were employed in taking in a large quantity of firewood. This necessary duty, of course, occupied considerable time. As soon as it was completed, Captain Trotter, who now saw clearly the necessity of abandoning the enterprise, and whose judgment was confirmed by that of the surgeon, (Dr. M'William,) gave the necessary orders for returning down the river. On the 4th of October, therefore, the steam was once more got up, and the *Albert* followed her consorts to the sea. Her condition at this period may be judged of by the fact that she had but a single officer and two or three European seamen capable of performing their duty. The confluence was passed upon the 9th, and immediately afterwards

the model farm, where, finding the Europeans all ill of the fever, Capt. Trotter took them on board, and continued to pursue his melancholy voyage. On the 12th the vessel anchored off Eboe, and was supplied by King Obi with a quantity of wood, which he had previously got ready for her, and which with great kindness he put on board with the least possible delay. Here Mr. Kingdon, the clerk of the Sudan, died. He had remained ashore at the farm during the Albert's absence at Egga, and was dangerously ill at the period of his reëmbarkation. Thus far the Albert had made her way in safety, through the merciful Providence of God; but her poor suffering inmates could not forget the dangerous bar which was still to be passed before they could leave the region of pestilence and death behind them. Happily, their anxieties on this head were destined to a speedy termination, for in the afternoon of the 13th their eyes were gladdened with the sight of the Ethiopie's smoke, as she steamed rapidly up the water of the Delta. Captain Becroft at once put his first engineer on board the unfortunate Albert, and by incessant exertions both vessels crossed the bar soon after sunrise on the 16th, and cast anchor in Clarence-cove late in the evening of the following day.

Next morning 28 patients were taken ashore, and kindly received into various private houses. Amongst the sufferers were Captains Trotter and Bird Allen; the former happily convalescent, the latter, alas! fast sinking into the grave. On the 25th, at half-past 9 A. M., his brave and gentle spirit exchanged a world of sorrow for one of unmixed and unchanging joy.

Captain Trotter, in a letter to the Lords of the Admiralty, relating to the foregoing incidents, says: "On the 5th of October, Mr. Willie weighed and dropped down the river, but was soon prevented by sickness from carrying on duty; and Dr. M'William, assisted by only one white seaman, lately recovered from fever, took charge of the vessel, not thinking it right, in my state of fever, to report Mr. Willie's illness. From want of engineers, we should have had to drop down the whole length of the river without steam, had not Dr. Stanger, the geologist, in the most spirited manner, after consulting Tredgold's work on steam, and getting some little instruction from the convalescent engineer, undertaken to work the engine himself. The heat of the engine-room affected the engineer so much as to throw him back in his convalescence, and prevent him rendering any further assistance, but Dr. Stanger took the vessel safely below Eboe, without anything going wrong with the machinery, while Dr. M'William, in addition to his enormous press of duty, as a medical officer, conducted the ship down the river in the most able and judicious manner. I may here remark, that the Doctor steered the ship entirely by Commander William Allen's excellent chart of the Niger, of the correctness of which we had a good opportunity of judging on ascending the river, and which proved eminently useful on the passage down; and Mr. Brown, clerk, a native of Africa, who had been up the river before, also rendered him considerable assistance in the pilotage. When about 100

miles from the sea, Captain Becroft happily made his appearance in the *Ethiope* steamer, having been requested to ascend the river and communicate with us by Commander William Allen of the *Wilberforce*; and it was really a providential mercy that he arrived when he did, for had any accident, however trivial, happened to the engines, they could not have been worked any longer, as Dr. Stanger had no knowledge of the manner of rectifying it. Fever still prevented my going on deck, and there was no executive officer to take the vessel over the bar, and only one convalescent sailor doing duty, and no black sailor who could properly take the helm. Captain Becroft, however, came on board with an engineer, and not only took the vessel over the bar, but brought her all the way across to this anchorage, [Fernando Po,] a distance of 160 miles, where we arrived in safety on the 17th inst. The assistance rendered by Captain Becroft, independent of the services of his vessel, the *Ethiope*, was, I can assure their Lordships, almost indispensable to the safety of the *Albert*; and I consider it to have been highly conducive to the preservation of many valuable lives, which might have been sacrificed, had we run aground in the Delta, and remained there even for a few days."

The sick were provided for with the greatest kindness by the agent of the West African Company. The air was found to be cooler by 12 degrees, than on the Niger. The *Albert*, on her return from the Niger, met the *Soudan* off the bar of the Nun, under the command of Lieutenant Strange, Lieutenant Fishbourne having gone among the sick to Ascension. She was about to reascend the river to render assistance to the *Albert*. She was in a very inefficient state, and returned to Fernando Po. Captain Trotter, in the letter above quoted, gives the following account of the state of the expedition on the 25th of October:

"Mr. Strange is at present in charge of the *Albert*, as well as the *Soudan*, the officers of the ship of every rank being in sick quarters, with the exception of Mr. Mouat, assistant-clerk, doing duty at the hospital.

"I regret to state, that in addition to the loss of Mr. Nightingale, assistant-surgeon, and four seamen, as mentioned in my letter of the 18th of September, between the Confluence and Egga, Mr. Lodge, the second engineer, threw himself overboard in a fit of delirium, and was drowned; and that afterwards two seamen and one marine of this ship died, and Mr. Kingdon, seamen's schoolmaster of the *Soudan*; and that Mr. Willie, mate, and the purser's steward, have died here since our arrival; and it is my painful duty to add that the death of Commander Bird Allen, of the *Soudan*, has been this moment reported to me, and that Mr. D. H. Stenhouse, acting Lieutenant of the *Albert*, is lying in a most precarious state. For several days after Mr. Willie was taken ill, he insisted occasionally upon getting out of his cot, (which was on deck,) and giving orders; and I fear the extra exertions of this zealous young officer contributed much to aggravate his case.

"I am happy to say there is a general improvement taking place in

the remainder of the sick, with the exception of Dr. M'William and Mr. Woodhouse, assistant-surgeon, who have lately been taken ill, the latter with the 'river fever,' and Dr. M'William, it is feared, may prove to be so likewise; but these cases, I trust, will not prove severe, now that we are in a better and cooler climate. I hope all the patients will be so far improved, and the engineers so much recovered, as in a short time to be able to proceed with the *Albert* to Ascension.

"I call the disease the 'river fever,' because the surgeons report it to be of a nature that is not treated of in any work on the subject, and it has such peculiarities as they appear never before to have witnessed either in African or West-Indian fever.

"The *Soudan*, as alluded to before, left the Confluence on her passage down the river on the 19th of September, under charge of Lieutenant Fishbourne, with the master, a mate, and the second engineer able to do a little duty; but on the following day these officers were too ill to afford Mr. Fishbourne any assistance. He had, however, two stokers able to drive the engines, who were for a time well enough to do duty, and he reached the mouth of the Nun in the short space of two days afterwards. During the last 24 hours before reaching Fernando Po he was compelled to work the engines and do every other duty himself. Such exertions could not fail to hurt his health, and he was seized with fever at this place after his arrival, though I am happy to say he was doing well on board the *Wilberforce* when she sailed for Ascension.

"I beg strongly to recommend the zeal and exertions of this officer for the favorable consideration of their Lordships.

"The *Soudan* opportunely met the *Dolphin* at the mouth of the Nun, and received prompt assistance from her commander, who embarked 35 patients, (all that were fit to be removed,) and sailed with them for Ascension, under charge of Mr. Sterling, assistant-surgeon of the *Wilberforce*.

"Before the *Soudan* reached Fernando Po, Mr. Marshall, acting-surgeon, and Mr. Waters, clerk in charge, fell a sacrifice to the climate, and a stoker of the *Soudan*, and the seaman's schoolmaster of the *Albert*, died after their arrival."

It appears from information to the latest date, that the whole number of deaths of officers and men, in the expedition, was 48, of whom 13 were officers and 35 privates. Of these deaths 39 were of the river fever and its consequences, and the rest from casualties and other diseases. The deaths in the *Albert*, which was 64 days in the river, and at its mouth, were 24; in the *Wilberforce*, which was 45 days in the river and at the mouth, 10; and in the *Soudan*, which was in the river 40 days, 14. Only five white persons in the *Wilberforce* escaped the fever; only four escaped in the *Albert*; and not one in the *Soudan*. Captain Trotter in his letter remarks: "When I add that Dr. M'William is of opinion that few, if any, will be fit to return to the coast of Africa who have had the fever, and that every lieutenant excepting Mr. Strange, all the medical officers but Dr. Pritchett and Mr.

Thompson, (it is doubtful yet whether Dr. M'William has the river fever or not,) all the mates, masters, second masters, and clerks, the whole of the engineers and stokers of the expedition, and the gunner of the *Albert*, (the only vessel that has an officer of that rank,) have been attacked, their Lordships will be able to form an idea of the paralyzed state of the steam vessels."

Dr. M'William is of opinion that the Niger is not fit for white constitutions. Captain Trotter was of opinion that it would be scarcely possible to officer more than one of the steamers, unless assistance should be sent from England. Captain Trotter states further, "It will be necessary for one steam-vessel to go up the Niger next year, as I left the *Amelia* tender at the confluence of the Niger and the Chadda, for the protection of the people of the model farm. Not thinking it right to leave up the river any white person after the fatal sickness we had experienced, I placed the vessel in charge of a trustworthy black, with twelve other natives of Africa under him, all intelligent steady men. Their Lordships will remember that they gave permission for the utensils of the model farm to be carried out by the expedition, which were landed at the desire of Mr. Can, the superintendent, at a spot which he selected for the site of the farm, situated immediately opposite to the confluence; and as Mr. Can made a request for naval protection to his people in the absence of the steamers, which I considered very reasonable, I obtained volunteers to remain there in the *Amelia* before the *Albert* went to Egga; and on my return to the confluence, I was too ill to do duty, but Dr. M'William, at my desire, sent nine months' provisions on board, and cowries were left to buy several months' more. In our distressed state, it would have been impossible to tow the *Amelia* down the river, but, independently of that consideration, it was, I conceive, necessary to leave a vessel for the protection of the farm people.

"It is also very desirable that a vessel should get up to Rabbah, if possible, next year, not only to complete a series of treaties which have been already commenced, but to show the people of Rabbah that a man-of-war can get up to their town; and the presence of one of Her Majesty's vessels there might, I conceive, have a beneficial effect in their future treatment of the Nufi nation, whom we found much oppressed by the Felatahs, and also tend much to the extinction of the slave trade in the upper part of the Niger. This, however, cannot be determined upon till I meet my brother commissioners at Ascension. Should only one of the steamers ascend the Niger next year, I would prefer one of the larger ones to be selected, from their superior velocity and stowage. Under present circumstances I would countermand the coals which I requested might be forwarded to Bonny, though, if already shipped, they will doubtless prove very useful; for it is more difficult to procure wood in that than in most other African rivers, owing to the prejudice of the natives against Kroomen cutting it."

Captain Trotter, shortly after the date of the foregoing letter, in consequence of the state of his health, returned to England, where he

arrived near the end of January. Some particulars of the condition of the sick have been learned since his departure. The government has intimated that it is not their intention to prosecute the expedition further. The vessels will probably return to England in the ensuing summer, after relieving the party who were left upon the Niger. Thus an enterprise, undertaken with the most philanthropic intentions, has entirely failed, and with a melancholy sacrifice of human life.

THE QUINTUPLE TREATY FOR THE SUPPRESSION OF THE AFRICAN
SLAVE TRADE.

[Signed at London, December 20, 1841.]

ART. I. — THEIR Majesties the Emperor of Austria, King of Hungary and Bohemia, the King of Prussia, and the Emperor of all the Russias, engage to prohibit all trade in slaves, either by their respective subjects or under their respective flags, or by means of capital belonging to their respective subjects; and to declare such traffic piracy. Their Majesties further declare, that any vessel which may attempt to carry on the slave trade shall, by that fact alone, lose all right to the protection of their flag.

ART. II. — In order more completely to accomplish the object of the present treaty, the high contracting parties agree by common consent, that those of their ships of war which shall be provided with special warrants and orders, prepared according to the forms of the annex A of the present treaty, may search every merchant vessel belonging to any one of the high contracting parties which shall, on reasonable grounds, be suspected of being engaged in the traffic in slaves, or of having been fitted out for that purpose, or of having been engaged in the traffic during the voyage in which she shall have been met with by the said cruisers; and that such cruisers may detain, and send, or carry away such vessels in order that they may be brought to trial in the manner hereafter agreed upon.

Nevertheless, the above-mentioned right of searching merchant vessels of any one or other of the high contracting parties, shall be exercised only by ships of war, whose commanders shall have the rank of captain, or that of lieutenant in the Royal or Imperial Navy, unless the command shall, by reason of death or otherwise, have devolved upon an officer of inferior rank. The commander of such ship of war shall be furnished with warrants according to the form annexed to the present treaty, under letter A.

The said mutual right of search shall not be exercised within the Mediterranean Sea. Moreover, the space within which the exercise of the said right shall be confined, shall be bounded, on the north by 32d parallel of north latitude; on the west, by the eastern coast of

America, from the point where the 32d parallel of north latitude strikes that coast, down to the 45th parallel of south latitude; on the south by the 45th parallel of south latitude, from the point where that parallel strikes the eastern coast of America to the 80th degree of longitude east from the meridian of Greenwich; and on the east by the same degree of longitude, from the point where it is intersected by the 45th parallel of south latitude up to the coast of India.

ART. III. — Each of the high contracting parties which may choose to employ cruisers for the suppression of the slave trade, and to exercise the mutual right of search, reserves to itself to fix, according to its own convenience, the number of the ships of war which shall be employed on the service stipulated in the second article of the present treaty, as well as the stations on which the said ships shall cruise.

The names of the ships appointed for this purpose, and those of their commanders, shall be communicated by each of the high contracting parties to the others; and they shall reciprocally apprise each other every time that a cruiser shall be placed on a station, or shall be recalled thence, in order that the necessary warrants may be delivered by the Governments authorizing the search, and returned to those Governments by the Government which has received them, when those warrants shall no longer be necessary for the execution of the present treaty.

ART. IV. — Immediately after the Government which employs the cruisers shall have notified to the Government which is to authorize the search, the number and the names of the cruisers which it intends to employ, the warrants authorizing the search shall be made out according to the form annexed to the present treaty, under letter A, and shall be delivered by the Government which authorizes the search to the Government which employs the cruiser.

In no case shall the mutual right of search be exercised upon the ships of war of the high contracting parties.

The high contracting parties shall agree upon a particular signal, to be used exclusively by those cruisers which shall be invested with the right of search.

ART. V. — The cruisers of the high contracting parties authorized to exercise the right of search and detention in execution of the present treaty shall conform themselves strictly to the instructions annexed to the said treaty, under letter B, in all that relates to the formalities of the search and of the detention, as well as to the measures to be taken, in order that the vessels suspected of having been employed in the traffic may be delivered over to the competent tribunals.

The high contracting parties reserve to themselves the right of making in these instructions by common consent, such alterations as circumstances may render necessary.

The cruisers of the high contracting parties shall mutually afford to each other assistance in all cases when it may be useful that they should act in concert.

ART. VI. — Whenever a merchant vessel, sailing under the flag of one

of the high contracting parties, shall have been detained by a cruiser of the other, duly authorized to that effect, conformably to the provisions of the present treaty, such merchant vessel, as well as the master, the crew, the cargo, and the slaves who may be on board, shall be brought into such place as the high contracting parties shall have respectively designated for that purpose, and they shall be delivered over to the authorities appointed with that view by the Government within whose possessions such place is situated, in order that proceedings may be had with respect to them before the competent tribunals in the manner hereafter specified.

When the commander of the cruiser shall not think fit to undertake himself the bringing in and the delivery up of the detained vessel, he shall intrust that duty to an officer of the rank of lieutenant in the Royal or Imperial navy, or at least to the officer who shall at the time be the third in authority on board the detaining ship.

ART. VII. — If the commander of a cruiser of one of the high contracting parties should have reason to suspect that a merchant vessel sailing under the convoy of, or in company with, a ship of war of one of the other contracting parties, has been engaged in the slave trade, or has been fitted out for that trade, he shall make known his suspicions to the commander of the ship of war, who shall proceed alone to search the suspected vessel; and in case the last mentioned commander should ascertain that the suspicion is well founded, he shall cause the vessel, as well as the master, the crew, the cargo, and the slaves who may be on board, to be taken into a port belonging to the nation of the detained vessel, to be there proceeded against before the competent tribunals, in the manner hereafter directed.

ART. VIII. — As soon as a merchant vessel, detained and sent in for adjudication, shall arrive at the port to which she is to be carried in conformity with annex B to the present treaty, the commander of the cruiser which shall have detained her, or the officer appointed to bring her in, shall deliver to the authorities appointed for that purpose a copy, signed by himself, of all the lists, declarations, and other documents specified in the instructions annexed to the present treaty, under letter B; and the said authorities shall proceed, in consequence, to the search of the detained vessel, and of her cargo, as also to an inspection of her crew, and of the slaves who may be on board, after having previously given notice of the time of such search and inspection to the commander of the cruiser, or to the officer who shall have brought in the vessel, in order that he, or some person whom he may appoint to represent him, may be present thereat.

A minute of these proceedings shall be drawn up in duplicate, which shall be signed by the persons who shall have taken part in, or who shall have been present at, the same; and one of these documents shall be delivered to the commander of the cruiser, or to the officer appointed by him to bring in the detained vessel.

ART. IX. — Every merchant vessel of any one or other of the five nations, which shall be searched and detained in virtue of the provi-

sions of the present treaty, shall, unless proof be given to the contrary, be deemed to have been engaged in the slave trade, or to have been fitted out for that traffic, if in the fitting, in the equipment, or on board the said vessel, during the voyage in which she was detained, there shall be found to have been one of the articles hereafter specified, that is to say :

1. Hatches with open gratings, instead of the close hatches which are used in merchant vessels.

2. Divisions or bulk-heads, in the hold or on deck, in greater number than are necessary for vessels engaged in lawful trade.

3. Spare plank fitted for being laid down as a second or slave-deck.

4. Shackles, bolts, or handcuffs.

5. A larger quantity of water, in casks or in tanks, than is requisite for the consumption of the crew of such merchant vessel.

6. An extraordinary number of water-casks, or of other receptacles for holding liquid, unless the master shall produce a certificate from the custom-house at the place from which he cleared outwards, stating that sufficient security had been given by the owners of such vessel that such extra number of casks or of other receptacles should only be used to hold palm-oil, or for other purposes of lawful commerce.

7. A greater quantity of mess-tubs or kids than are requisite for the use of the crew of such merchant vessel.

8. A boiler, or other cooking apparatus, of an unusual size, and larger, or capable of being made larger, than requisite for the use of the crew of such merchant vessel ; or more than one boiler, or other cooking apparatus, of the ordinary size.

9. An extraordinary quantity of rice, of the flour of Brazil manioc, or cassada, commonly called farina, or of maize, or of Indian corn, or of any other article of food whatever, beyond the probable wants of the crew ; unless such quantity of rice, farina, maize, Indian corn, or any other article of food, should be entered on the manifest, as forming a part of the trading cargo of the vessel.

10. A quantity of mats or matting greater than is necessary for the use of such merchant vessel, unless such mats or matting be entered on the manifest as forming part of the cargo.

If it is established, that one or more of the articles above specified are on board, or have been on board during the voyage in which the vessel was captured, that fact shall be considered as *prima facie* evidence that the vessel was employed in the traffic ; she shall in consequence be condemned, and declared lawful prize, unless the master or the owners shall furnish clear and incontrovertible evidence, proving to the satisfaction of the tribunal, that at the time of her detention or capture the vessel was employed in a lawful undertaking ; and that such of the different articles above specified as were found on board at the time of detention, or which might have been embarked during the voyage on which she was engaged when she was captured, were indispensable for the accomplishment of the lawful object of her voyage.

ART. X. — Proceedings shall be immediately taken against the

vessel detained, as above stated, her master, her crew, and her cargo, before the competent tribunals of the country to which she belongs; and they shall be tried and adjudged according to the established forms and laws in force in that country; and if it results from the proceedings that the said vessel was employed in the slave trade, or fitted out for that traffic, the vessel, her fittings, and her cargo of merchandise, shall be confiscated; and the master, the crew, and their accomplices, shall be dealt with conformably to the laws by which they shall have been tried.

In case of confiscation, the proceeds of the sale of the aforesaid vessel shall, within the space of six months, reckoning from the date of the sale, be placed at the disposal of the Government of the country to which the ship which made the capture belongs, in order to be employed in conformity with the laws of that country.

ART. XI. — If any one of the articles specified in Article IX. of the present treaty is found on board a merchant vessel, or if it is proved to have been on board of her during the voyage in which she was captured, no compensation for losses, damages, or expenses, consequent upon the detention of such vessel, shall in any case be granted, either to the master or to the owner, or to any other person interested in the equipment or in the lading, even though a sentence of condemnation should not have been pronounced against the vessel, as a consequence of her detention.

ART. XII. — In all cases in which a vessel shall have been detained in conformity with the present treaty, as having been employed in the slave trade, or fitted out for that traffic, and shall, in consequence, have been tried and confiscated, the Government of the cruiser which shall have made the capture, or the Government whose tribunal shall have condemned the vessel, may purchase the condemned vessel for the service of its Royal navy, at the price fixed by a competent person, selected for that purpose by the said tribunal. The Government whose cruiser shall have made the capture shall have a right of preference in the purchase of the vessel. But if the condemned vessel should not be purchased in the manner above pointed out, she shall be wholly broken up immediately after the sentence of confiscation, and sold in separate portions after having been broken up.

ART. XIII. — When by the sentence of the competent tribunal it shall have been ascertained that a merchant vessel detained in virtue of the present treaty was not engaged in the slave trade, and was not fitted out for that traffic, she shall be restored to the lawful owner or owners. And if, in the course of the proceedings, it shall have been proved that the vessel was searched and detained illegally, or without sufficient cause of suspicion; or that the search and detention were attended with abuse or vexation, the commander of the cruiser or the officer who shall have boarded the said vessel, or the officer who shall have been intrusted with bringing her in, and under whose authority, according to the nature of the case, the abuse or vexation shall have occurred, shall be liable in costs and damages to the masters and the owners of the vessel and of the cargo.

These costs and damages may be awarded by the tribunal before which the proceedings against the detained vessel, her master, crew, and cargo, shall have been instituted; and the Government of the country to which the officer who shall have given occasion for such award shall belong, shall pay the amount of the said costs and damages within the period of six months from the date of the sentence, when the sentence shall have been pronounced by a tribunal sitting in Europe; and within the period of one year when the trial shall have taken place out of Europe.

ART. XIV. — When in the search or detention of a merchant vessel effected in virtue of the present treaty any abuse or vexation shall have been committed, and when the vessel shall not have been delivered over to the jurisdiction of her own nation, the master shall make a declaration upon oath of the abuses or vexations of which he shall have to complain, as well as of the costs and damages to which he shall lay claim; and such declaration shall be made by him before the competent authorities of the first port of his own country at which he shall arrive, or before the consular agent of his own nation at a foreign port, if the vessel shall in the first instance touch at a foreign port where there is such an agent.

The declarations shall be verified by means of an examination upon oath of the principal persons amongst the crew or the passengers, who shall have witnessed the search or detention; and a formal statement of the whole shall be drawn up, two copies whereof shall be delivered to the master, who shall forward one of them to his Government, in support of his claim for costs and damages.

It is understood, that if any circumstance beyond control shall prevent the master from making his declaration, it may be made by the owner of the vessel, or by any other person interested in the equipment or in the lading of the vessel.

On a copy of the formal statement above mentioned being officially transmitted to it, the Government of the country to which the officer to whom the abuses or vexations shall be imputed shall belong, shall forthwith institute an inquiry; and if the validity of the complaint shall be ascertained, that Government shall cause to be paid to the master or the owner, or to any other person interested in the equipment or lading of the molested vessel, the amount of costs and damages which shall be due to him.

ART. XV. — The high contracting parties engage reciprocally to communicate to each other, when asked to do so, and without expense, copies of the proceedings instituted, and of the judgments given, relative to vessels searched or detained in execution of the provisions of this treaty.

ART. XVI. — The high contracting parties agree to insure the immediate freedom of all the slaves who shall be found on board vessels detained and condemned in virtue of the stipulations of the present treaty.

XVII. — The high contracting parties agree to invite the maritime

powers of Europe, which have not yet concluded treaties for the abolition of the slave trade, to accede to the present treaty.

ART. XVIII. — The acts or instruments annexed to the present treaty, and which it is mutually agreed to consider as forming an integral part thereof, are the following :

A.—Forms of warrants of authorization, and of orders for the guidance of the cruisers of each nation, in the searches and detentions to be made in virtue of the present treaty.

B.—Instructions for the cruisers of the naval forces employed in virtue of the present treaty, for the suppression of the slave trade.

ART. XIX. — The present treaty, consisting of nineteen articles, shall be ratified, and the ratifications thereof shall be exchanged at London at the expiration of two months from this date, or sooner if possible.

In witness whereof, the respective Plenipotentiaries have signed the present treaty, in English and French, and have thereunto affixed the seal of their arms.

Done at London, the 20th day of December, in the year of our Lord, 1841.

ABERDEEN.
KOLLER.
ST. AULAIRE.
SCHLEINITZ.
BRUNOW.

A.

Annex. — Instructions to Cruisers.

1. Whenever a merchant vessel belonging to, or bearing the flag of, any one of the high contracting parties, shall be visited by a cruiser of any one of the other high contracting parties, the officer commanding the cruiser shall, before he proceeds to visit the said vessel, exhibit to the master of such vessel the special orders which confer upon him by exception the right to visit her; and he shall deliver to such master a certificate, signed by himself, specifying his rank in the navy of his country, and the name of the ship which he commands, and declaring that the only object of his visit is to ascertain whether the vessel is engaged in the slave trade, or is fitted out for the purpose of such traffic, or has been engaged in that traffic during the voyage, in which she has been met with by the said cruiser. When the visit is made by an officer of the cruiser other than her commander, such officer shall not be under the rank of lieutenant in the navy; unless he be the officer who at the time is second in command of the ship by which the visit is made; and in this case, such officer shall exhibit to the master of the merchant vessel a copy of the special orders above mentioned, signed by the commander of the cruiser; and shall likewise deliver to such master a certificate, signed by himself, specifying the rank which he holds in the navy of his country, the name of the commander under whose orders he is acting, the name of the cruiser to which he belongs, and the object of his visit as heretofore recited.

If it shall be ascertained by the visit that the ship's papers are regular, and her proceedings lawful, the officer shall certify upon the log-book of the vessel, that the visit took place in virtue of the special orders above mentioned; and when these formalities shall have been completed, the vessel shall be permitted to continue her course.

2. If, in consequence of the visit, the officer commanding the cruiser shall be of opinion that there are sufficient grounds for believing that the vessel is engaged in

the slave trade, or has been fitted out for that traffic, or has been engaged in that traffic during the voyage in which she is met with by the cruiser; and if he shall in consequence determine to detain her, and to have her delivered up to the jurisdiction of the competent authorities, he shall forthwith cause a list to be made out, in duplicate, of all the papers found on board, and he shall sign this list and the duplicate, adding, after his own name, his rank in the navy, and the name of the vessel under his command.

He shall, in like manner, make out and sign, in duplicate, a declaration, stating the place and time of the detention, the name of the vessel, and that of her master, the names of the persons composing her crew, and the number and condition of the slaves found on board.

This declaration shall further contain an exact description of the state of the vessel and her cargo.

3. The commander of the cruiser shall, without delay, carry or send the detained vessel, with master, crew, passengers, cargo, and the slaves found on board, to one of the ports hereinafter specified, in order that proceedings may be instituted in regard to them, conformably to the laws of the country under whose flag the vessel is sailing; and he shall deliver the same to the competent authorities, or to the persons who shall have been specially appointed for that purpose by the Government to whom such port shall belong.

4. No person whatever shall be taken out of the detained vessel; nor shall any part of her cargo, nor any of the slaves found on board, be removed from her, until after such vessel shall have been delivered over to the authorities of her own nation; unless the removal of the whole or part of the crew, or of the slaves found on board, shall be deemed necessary, either for the preservation of their lives, or from any other consideration of humanity, or for the safety of the persons who shall be charged with the navigation of the vessel after her detention. In any such case, the commander of the cruiser, or the officer appointed to bring in the detained vessel, shall make a declaration of such removal, in which he shall specify the reasons for the same; and the masters, sailors, passengers, or slaves so removed, shall be carried to the same port as the vessel and her cargo, and they shall be received in the same manner as the vessel, agreeably to the regulations hereinafter set forth.

Provided always, that nothing in this paragraph shall be understood as applying to slaves found on board of Austrian, Prussian, or Russian vessels.

[The foregoing, together with several other articles of instructions, describing the ports to which the vessels detained shall be sent for adjudication, according to the flag to which they belong, and the sea in which they may be captured, and also the forms of proceeding on arrival at those ports, were annexed to the foregoing treaty, and signed on the same day. The treaty having been signed by the five Powers, December 20, was ratified by four of the said Powers, and the ratifications were exchanged at London on the 19th of February; it being understood, that the protocol should be kept open for the ratification of France on any subsequent day.]

THE CALCULATING MACHINE.

THERE are few efforts of the mind more fatiguing, more irksome, dry, and monotonous, than the drudgery of making long calculations. The fixed and unceasing attention to a subject in itself devoid of in-

terest, when the slightest intrusion of thought or fancy destroys the work already done, and compels us to return our weary way, is enough to addle and stupify the brain. No wonder, then, that, from times immemorial, the ingenuity of man should have been directed to the discovery of some contrivance, whereby this wearisome labor might be lightened or abridged. Hence the invention of calculating instruments and mechanical aids of various kinds. This long-sought desideratum appears at length to have been obtained; but before we present to our readers some account of the latest attempts of this kind, we will take a rapid glance at the various endeavors previously made to accomplish the end in view, and which will place in a more conspicuous light the merits of this new invention.

The instruments hitherto contrived for assisting or abbreviating calculations may be classified as follow :

1. Such as supersede the mere setting down of figures, but require as close an application of the mind as common arithmetic. To this class belong the calculating boxes of the Russians and Chinese, where the figures are represented by balls moved by wires. Even the Romans possessed an instrument of this kind, called *Abacus*, in which the figures were indicated by buttons running in grooves.

2. To another class belong such instruments as are constructed on the following principle, viz. : Two long slender rules are divided into 100 equal parts, those parts being numbered from 0 to 100, and are thus used : If, for instance, it be desired to add 17 to 23, the rules must be so placed that the 0 of one shall be exactly opposite to 17 in the other, then by finding 23 on the first, you will have below it on the second, the number 40 as the result. If, on the contrary, you wish to subtract one number from another, as 13 from 30, the number 13 on one rule must be brought opposite to 30 on the other, and the 0 of the former you will find 17, the remainder. Such contrivances, being of very limited utility, and partaking more of the character of toys than of practical inventions, have long since sunk into oblivion. Instruments on this principle, some square, and others of a circular form, have been produced by Perrault, in 1720; Poetins, in 1728; Peregre in 1750; Prahl in 1789; Gruson in 1790; Guble in 1799, &c.

3. A third class of instruments for assisting calculators comprises the "*Virgulæ Napierinæ*," as likewise the other works of this celebrated Scotchman, namely, his "*Multiplicationis Promptuarium*" and his "*Abacus Arcalis*," in 1617, and his "*Rhabdologia*." In his footsteps followed Caspar Scott, 1620; Demeam, in 1731; Lordan, in 1798; Leopold, Pelit, and others.

4. Equally well known with the foregoing, is the calculating scale, so much used by the English in mechanics, which was invented by Michael Scheffelt, of Ulm, in 1699.

All the contrivances above enumerated, and others which we pass over in this brief sketch, do certainly diminish the labor of arithmetical calculations, more or less, but they all require the attention to be

fixed, and do not completely attain the object sought. Hence the aim of scientific men has been to invent an automaton, or self-acting instrument, for calculation, which alone can deserve the name of a calculating machine. The first attempt of this kind was made by Blaise Pascal, in 1640. His machine performed addition and subtraction mechanically; but it was so difficult to work, and the mechanism so imperfect, that it was soon discarded and forgotten. A similar destiny attended a machine for adding and subtracting, invented in England by Samuel Moreland, in 1673. His other mathematical instrument is nothing more than an adaptation of Napier's scale to circles for multiplication and division. The defects and insufficiency of these two inventions of Pascal and Moreland, gave rise to subsequent endeavors to improve them. Lepine in 1725, and Hillorin de Boistissandean in 1730, were not more successful than their predecessors; nor did Gerstein's invention, submitted to the Royal Society of London in 1735, afford any greater satisfaction.

In Italy, in 1709, Polenius tried his skill on a machine of this kind, but produced only a coarse unsightly abortion, incumbered with weights, that was far inferior to those which had preceded it. In all these cases the aim of the inventors was only to work addition and subtraction. Leibnitz sought to extend the operations of an arithmetical calculator to multiplication and division. The plan of his machine was submitted to the Royal Society of London in 1673, and met the approbation of the society. A similar honor attended it a short time afterwards from the Academy of Sciences at Paris. But, despite the approbation of those celebrated learned bodies, the plan which looked so promising on paper proved impracticable in execution. Leibnitz labored hard during his whole life to bring his scheme to perfection, expended vast sums upon it, and yet effected nothing. Death carried him off, and his work remained unfinished and forgotten. In 1727, Leopold promised to publish to the world the plan of a machine that should perform addition, subtraction, and multiplication. He died, leaving behind him only a few fragments of his plan. After this it seems that no further attempts were made for a long period, until, in the year 1799, a minister of Wirtemberg named Hahn, came forward with a new machine, which, however, attracted no attention, as it was found to commit serious errors in arithmetic; its internal structure remains unknown, as does also that of a faulty instrument presented to the Academy of Sciences in Gottingen, by Muller, 1786.

The machine invented by Mr. Thomas Colmer in 1820, was a retrograde step in this branch of science.

In the year 1821, Mr. Babbage of London undertook to construct a machine for Government, which should by mechanical means form tables of progression for the use of surveyors. A portion of this machine, forming a progression up to five figures, was complete; £17,000 had been expended upon it already, and to perfect the entire work would have required twice as much more; consequently, in 1833, the project was abandoned, and it is not probable that the costly machine will be brought to a perfect state.

The fragment or member alluded to may be seen at the inventor's. Mr. Babbage is at present occupied with the plan of a machine which is to perform mechanically all the operations of algebra. Already he has 30 plans extant. Every friend of science must heartily wish that the inventor may be more successful with his new project than he was with the previous one. We come now to speak of the recent successful attempt before alluded to. For the last two years, Dr. Roth, of Paris, has been engaged in the construction of arithmetical machines, and the success that has attended his efforts hitherto proves he has accomplished his scheme for performing automatically all the operations of arithmetic, from simple addition, subtraction, multiplication, and division, to vulgar and decimal fractions, involution and evolution, arithmetical and geometrical progression, and the construction of logarithms, with ten plans of decimals. The machine in its present state works addition, subtraction, multiplication, and both kinds of progression, quite mechanically. In division alone the attention is required to avoid passing over the cipher. The arithmetical progression is of vast importance, as it operates from one furthing to millions of pounds sterling; and when we consider the variety and utility of the functions performed by a small instrument, not more than a foot wide, and its comparatively insignificant price, we cannot but congratulate the inventor on his decided success in the results hitherto obtained, and express our cordial wishes that he may meet with every encouragement to persevere in his highly interesting and important labors.

Mr. Wertheimber, the proprietor and patentee of this invention, has two descriptions of these machines: a larger one, which performs sums in addition, subtraction, multiplication, and division; and a smaller, which performs addition and subtraction only. These machines have been submitted to the inspection of several gentlemen eminent for their scientific attainments, all of whom, particularly Mr. Babbage, have expressed the most unqualified admiration at their unparalleled ingenuity of construction. Mr. Wertheimber had the honor of an introduction to the Royal presence, at Windsor Castle, when both her Majesty and Prince Albert were graciously pleased to express their approbation of the machines, and to order two of each sort to be supplied for their use. — *London Paper*.

BARON NAPIER'S invention, alluded to above, was curious and ingenious. He called the treatise in which he described it *Rhabdologia*, from the Greek *ῥάβδος*, a rod, because he used several small rods, or slips of card or metal, for tools in his processes.

The apparatus was merely intended to perform those parts of multiplication and division which are usually strictly mechanical and dependent on the memory. For these purposes it abridges considerably the ordinary processes; but Napier's subsequent invention of logarithms entirely superseded it for general use. We are not sure, however, but a set of the *rhabdoi* might even now prove at times very convenient.

The staves or rods are small slips, of any convenient size; the figures below are quite large enough. Each of these slips are arranged to show the nine first multiples of one of the nine digits. Care must be taken to separate the tens of the multiples from the units by a transverse line. Thus, in figure 1, below, the staff for 8 is represented. Its length, as will be seen, is divided into nine compartments, which, in their order, show the nine first multiples of 8, 8, 16, 24, &c.; the 1 and 6 which make up 16 being separated by the transverse line, and so of the figures denoting tens and units in the other multiples.

A number of these slips must be prepared, as we have said, for each digit; besides these, there will be needed one slip containing the digits themselves on its nine divisions. Figure 2 will serve to show what use is to be made of these different varieties.

8
1
8
16
24
32
40
48
56
64
72

Fig. 1.

1	1	2	9	6
1	1	2	9	6
2	2	4	18	12
3	3	6	27	18
4	4	8	36	24
5	5	10	45	30
6	6	12	54	36
7	7	14	63	42
8	8	16	72	48
9	9	18	81	54

Fig. 2.

We have supposed, in arranging it, that the number 1296 was to be the multiplicand in the proposed operation. For this purpose four of the slips of card, prepared for 1, for 2, for 9, and for 6, the digits making up this multiplicand must be placed side by side, as in the figure. The card containing the digits in their order must be placed next them. This arrangement makes a multiplication table which is precisely prepared for the proposed process. The row of figures in the second line of

the table will give 2,592, the duplicate of 1,296, care being taken to add the tens on each slip to the units on the next to the left, with which they are connected in the transverse column. Thus there are given by the table

$$\begin{array}{l} 2 \text{ thousands} \\ 4+1=5 \text{ hundreds} \\ 8+1=9 \text{ tens} \\ \text{and 2 units, or 2,592:} \end{array}$$

as will be readily perceived by a slight inspection of the figure. The third line will give the product of multiplication by three, and so of the others.

Suppose now that 3,456 is to be the multiplier in the operation to be performed. Instead of performing the multiplication by the separate digits of the multiplier, we have only to read off the products of such multiplication from the horizontal lines of the table, corresponding to them, and set them down as in the ordinary process, adjusting the tens on each card as we have directed above. Thus,

$$\begin{array}{r} 1,296 \times 6 \text{ will give } 7,776 \\ \text{" } \times 5 \text{ " " } 64,80 \\ \text{" } \times 4 \text{ " " } 518,4 \\ \text{" } \times 3 \text{ " " } 3,888 \\ \hline 4,478,976 \end{array}$$

The application to division will be readily seen. Suppose the product just obtained is to be divided by 1,296. The arrangement of the cards as above shows that the nine first multiples of that number are

1.	1,296	4,478,976 1,296
2.	2,592	3,888 3,456
3.	3,888	<hr/> 5,909
4.	5,184	5,184
5.	6,480	<hr/> 7,257
6.	7,776	6,480
7.	9,072	<hr/> 7,776
8.	10,468	7,776
9.	11,664	<hr/> 0

The division, like the multiplication, being performed as usual; but the mechanical process of multiplication in the calculations being performed by the arrangement of the cards.

The kind of calculations where the instrument would be most likely to be of use, are those where the same multiplier or divider is to be constantly employed, as in calculations for the reduction of amounts given in one system of weights and measures into those of another. The cards can then be arranged once for all, and the amounts of the different parts of the process immediately transferred for use.

To prevent the inconvenience arising from the use of so many different slips of card, or metal, a French artist has made a very neat

arrangement, which gives the apparatus in a very convenient form. He places several small cylinders in a convenient case, parallel with each other, each of which has, on its surface, in nine several columns, the multiples of the nine digits, in the same way that they are arranged on the cards. These cylinders are each arranged to turn separately, so that they may be at once adapted for the operation, and remain fixed as they are wanted. The numbers of the several divisions are permanently fixed on the side of the case.

NEW INVENTION IN MACHINERY.

A LONDON journal gives the following description of a recent invention in Scotland. It is called an air engine, and is described as now working at the Dundee Foundry, a patent having been taken out for it. It is the joint invention of the Rev. Dr. Stirling, of Galston, and of his brother, Mr. Stirling, engineer, Dundee.

The principle of the invention consists in alternately heating and cooling two bodies of air confined in two separate vessels, which are so arranged, that by the strokes of two plungers, worked by the engine, the whole of the air contained in one of the vessels is sent to the lower end, immediately over the furnace, and is consequently made quite hot, while the whole of the air contained in the other vessel is at the same time transmitted to the upper end, which is cut off from any communication with the furnace, and is therefore comparatively cold.

The expansion caused by the heat renders the air in the one vessel alternately much more elastic than that in the other; and the two ends of the working cylinder, which is fitted with a piston similar to that of a steam engine, being respectively connected with the two air vessels, a preponderating pressure is produced, by turns, on each side of the piston, which is thereby pushed to the opposite end of the cylinder; and so, by the alternate action of the plungers in the two air vessels, it continues a reciprocating motion, and is applied to turn a crank in the same way that a steam engine does.

It has been satisfactorily shown that this engine may be worked with very great economy of fuel, as compared with a steam engine. The principal means of producing the saving is this: that of the heat which is communicated to the air from the furnaces, only a very small portion is entirely thrown away when it comes again to be cooled; for, by making the air, in its way from the hot to the cold end of the air-vessel, to pass through a chamber divided into a number of small apertures or passages, the great extent of surface with which it is thereby brought in contact, extracts from it in the first place, but only temporarily, the greater part of the heat; and afterwards restores it on the air on its passage back again from the cold to the hot end of the vessel. The

process of cooling is finally completed, by making the air pass through between a number of tubes in which there is a current of cold water, and thus far the heat cannot be made available again; but the portion which is abstracted in this way is very small.

As a sufficient expansive power could not be attained in so small a space without greater alterations of temperature from using air of the common density of the atmosphere, the air used is pretty highly compressed, and a much greater power is thereby obtained upon a given area of the piston.

A small air-pump, worked by the engine, is therefore necessary to keep up the air to the requisite density; but very little power is expended on this: all that is required of the pump, after the engine has been once charged, being to supply any loss of air that may arise from leakage, which is found to be very trifling.

The machine has been working occasionally for above six months, and it has been proved to be capable of performing advantageously the amount of work which the inventors had anticipated from their calculations and previous experiments. It has now for upwards of a month been driving all the machinery at the extensive engineering works of the Dundee foundry, which a steam-engine of approved construction had hitherto been employed to do; and it has been ascertained that the expenditure of fuel is, *ceteris paribus*, less than one-fifth part of what was required for the steam engine; but as considerable improvements are contemplated in some of the details, it is confidently expected that a much greater saving will eventually be effected.

The whole machine, including its furnaces and heating apparatus, stands in about the same space that a steam-engine of equal power would occupy without its furnaces and boiler. Taking into account the saving of space along with the vast economy of fuel, this invention must necessarily be of immense importance for all ordinary purposes requiring motive power. As an instance, it would reduce the expense of the power employed in driving machinery in Dundee alone by at least £25,000 or £30,000 a year. But, viewed in reference to the purposes of navigation, it must lead to results still more extraordinary, and will render a voyage to India round the Cape by machinery a matter of perfectly easy accomplishment.

IMPROVEMENT IN STEAM NAVIGATION.

WE have heretofore given a description of the mode of applying steam power to navigation, by means of the Archimedean screw and Ericsson's propeller. The London Morning Post gives the following account of an experiment which was recently made in the Thames, of an approved mode of applying these improvements, in connexion

with the rotary engine. One great objection to their adaptation hitherto, the difficulty, (except by complicated gearing,) of getting up the necessary number of revolutions, appears to be entirely obviated by Mr. Beale, as from the description below, the propeller may be driven *direct* from the engine shaft, at a very great speed.

“The steam principle seems, moreover, to be very materially accelerated by the great improvements in the working of it. The rotatory engine, for instance, is calculated to bring about great results in connexion with the steam process. It is a wonderful simplification of the machinery now in use, and much less expensive. The difference in this respect is to be found, in perhaps equal degrees, with reference both to the works themselves and the consumption of fuel. It is not often that we, of the city department of the paper, find an opportunity of indulging in water excursions; but an opportunity being afforded us of witnessing the performances of the newly-constructed vessel called the ‘Anti-John Scott Russell,’ we passed an hour on board of her on the river, and certainly we have seldom experienced a higher gratification. This little model is 53 feet in length, by 6 feet in width. The paddle-wheels are 6 feet 5 inches in diameter, and they make from 60 to 70 revolutions per minute, propelling the boat at the unequalled, and we may say, for a small boat, unheard-of velocity, of at least 12 miles per hour. The engine is one of eight-horse power, 14 inches in diameter, and 9 1-2 inches in length. It is worked on the condensing principle, and makes 270 revolutions against 60 of the paddle wheel. The boat, we are informed, has been repeatedly tested during the last two months, and it appears that no difficulty whatever has occurred with the engine, which is in excellent working order. Mr. Beale tells us, that he has in a state of forwardness an engine constructed upon the same simple and beautiful principle, of sixty-horse power, intended for actual business. The model boat has been named after Mr. John Scott Russell, with the prefix of ‘anti,’ because that intelligent gentleman has very boldly and publicly asserted, that ‘to make as effective a rotatory as an ordinary reciprocating steam-engine is impracticable.’

“The little craft shot like lightning through the water, and it were superfluous to add, that she attracted, in a singular degree, the attention of the seafaring persons she encountered on the river. The figure-head represents Mr. Beale taking what is called ‘a sight,’ and, if the skeptical Mr. Russell has not yet seen it, we hope he will lose no time in doing so. Where success is thus complete, the gilded *jeu d’esprit* is very pardonable, and, with all his misgivings about the rotatory principle, we venture to say that he will so consider it.”

STEAMBOAT LITTLE WESTERN, ON THE THAMES.

A LONDON journal gives the following description of the new steamer *Little Western*, and of an experimental trip on the Thames, which was attended by a number of officers of the navy, and other scientific gentlemen. She left her moorings off the Brunswick Hotel, at a quarter to 11; the tide then running down, and the wind blowing from the south-west. There was, however, but little wind, and the weather was clear and pleasant. She was accompanied down the river by one of the fastest boats, viz., the *Railway*, for which she waited off Galleons, and with which she contested head and head to Gravesend. The speed of the *Little Western* is extraordinary; she reached the Nore Light within 2 hours and 55 minutes from the time of starting, and returned to Blackwall within 2 hours and 25 minutes. The distance is 44 miles. This vessel is built on an improved principle. Her tonnage measurement is a fraction beyond 721 tons. She measures between perpendiculars 200 feet, measurement over all 216 feet. Her keel measurement is 195 feet. Her breadth, clear of her paddle-boxes, is rather above 27 feet; and her breadth over all exceeds 47 feet. Her deck is flush from stem to stern, and she has two masts. Her internal accommodations are very good, as may be surmised from the measurement of her saloon and cabins, &c. The length of her saloon is nearly 44 feet, and the room is elegantly and commodiously fitted up, without being gaudy or fantastic; it is also a good height, and is 24 feet wide. The ladies' cabin is nearly 20 feet long. The engines, which are horizontal and low pressure, are of 80-horse power each. Altogether she is a most elegant craft, and an admirable sea-boat. She has weathered a gale off the Land's-end, and proved her capability to contend against a rough sea and a heavy wind. This vessel was built at Bristol, by Messrs. Acramans, Morgan & Co. She is a vessel excellently adapted to the London and Ramsgate station. Her prodigious speed, superior accommodation, and tractability, render her peculiarly desirable for trips, in which convenience and rapidity are imperative.

THE ARTESIAN WELL AT GRENELLE.

WE have before called attention to this magnificent work of modern science, [*Mon. Chron.* Vol. II. p. 93.] It is with regret that we have seen recent announcements, that some difficulty has taken place in the work, in consequence of the leakage of the joints of the pipes. The following extract from a report of the French Academy will show the state in which the works at present are:

“A part of the accidents and difficulties at the Artesian well at Gre-

nelle, which have taken place in the course of the four or five months since these subterranean waters have been spouting up, have been made known to the public. But there is no end to these tribulations, and the definitive success of this great work is not altogether matter of certainty. M. Arago, at the late session of the Academy, gave a somewhat melancholy picture of the present state of that fountain, which has inspired such great hopes. The first system of interior pipes did not succeed, and the water filtered through the spaces, which were left between ends of the different pipes; and it was found necessary to draw up all these pipes, and endeavor to introduce one made in a single unbroken piece. The undertaking was great and bold; but it happened that from the impossibility of screwing this copper pipe to a part of the first tube, which remained fixed at the bottom of the well, the water again flowed on the outside as well as within the new pipe. The result was, therefore, the double flow of the water, without and within. The first, however, prevailing over the second, in consequence of the obstruction made by the gravel to the free passage of the water, the pipe became flattened in several parts, and twisted into the form of a corkscrew, so that now, neither the water nor the sounding-rod can pass into the centre of the tube, and it has as yet been found impossible, with the greatest effort, to draw up the tube from the ground, where it remains firmly fixed. From the great confidence, however, which is felt in the skill of the artist who superintends this work, assisted by the advice of the learned men by whom he is surrounded, no doubt seems to be entertained, that these new and powerful obstacles will be overcome, and that the city of Paris will reap the fruit of the sacrifices which she has made in this laborious undertaking."

It will be remembered that the well at Grenelle is undertaken by the city of Paris for the supply of water to one of the *abattoirs* or slaughter-markets of that metropolis.

CUTTING STONE BY MACHINERY. — PATENT IRON MASON.

A MACHINE under this name, (for which a patent has just been taken out,) is about to be erected in one of Mr. Nelson's quarries at Woodside, Glasgow. The stones go into the machine rough as they come from the quarryman's pick, and come out polished ashlar on the surface, and cut parallel and square on the sides, fully prepared for the builder, and this at an expense of not more than a fourth of work done by hand. The present machine is calculated to do the work of 250 men, reckoning only six hours' work out of every ten. The machine has been constructed by Messrs. P. W. M'Onie & Co., engineers, Scotland-street, Tradeston, the design and arrangements being the work of Mr. P. M'Onie, of that firm. We understand the machine, with the ex-

perimenting and patents, has cost £1,000, although new machines of the same size can now be made for one third of that sum, and smaller ones proportionably cheaper. — *Practical Mechanic*.

PHOTOGRAPHIC PORTRAITS.

A VERY desirable improvement, and one materially differing in its nature from all former steps in photographic art, has recently been introduced by an invention of Mr. Fox Talbot, for which a patent has been taken out. The improvement consists in the portraits being taken on paper, instead of on metallic plates, of their being indelible, of the extreme accuracy of likeness, the breadth of light and shadow, the general pictorial effect, and the capability of the portrait being multiplied into many copies or transcripts, or *facsimile* representations, without the sitter being required to sit for each portrait. They resemble sepia drawings, and are exceedingly true. The sitting requires but a minute, or two minutes, according to the brightness of the day. The paper is prepared with salts of silver, and subjected, by an apparatus furnished with glasses, to the rays of light, and the likeness is, as it were, absorbed by the paper. A description of this process cannot be conveyed very clearly in a written description; nor is it necessary that it should be, because it is easy for all who feel an interest in art to avail themselves of a personal inspection of the process by making a proper application to the artist. The process is called the "calotypic" process. It affords very curious evidence of the agency of light in effecting chemical changes, and it shows how science may be made subservient or auxiliary to the advancement of the fine arts. The portraits obtained by this invention may be placed in portfolios or suspended in frames as ornaments and reminiscences of friends and relatives; and the faithfulness of resemblance may be relied on. There is no distortion of feature, and none of that hardness, by which common photographic portraits are disfigured, and being on paper, defects may be amended by the pencil of the artist, and judicious additions introduced, by which a picture as well as a mere portrait may be secured. — *London Times*.

THE DEAD SEA.

At a recent sitting of the Academy of Science, at Paris, M. Arago read a communication from M. Rusiger, a German geologist, on certain geometrical observations made in order to ascertain the relative altitudes of the Dead Sea in Palestine, and the Mediterranean. It

appeared not only that the surface of the Dead Sea was 219 toises, or about 1,314 English feet, lower than that of the Mediterranean, but also, from the geological phenomena observed on its shores, that the formation of the basin in which it lies was antecedent to all historic epochs. Hence the supposition that the sea was formed by the sinking of the plain on which the cities of the Pentapolis, (Sodom, Gomorrah, &c.) were situated, is incorrect. M. Arago added, that the observations of M. Berto, a French engineer, made the depression of the Dead Sea below the Mediterranean 419 metres, or 1,374 English feet.

IMPROVEMENT IN THE ARMAMENT OF SHIPS.

A CORRESPONDENT of a London journal describes, and recommends for adoption, the following improvement in the armament of American ships :

A few months ago, being in the United States, through the kindness of an officer of the American navy, I had an opportunity of going on board the line-of-battle ship, Delaware. She certainly is a noble ship ; but our Rodney, London, and Nile, are quite equal to her, and I think, in some respects, superior. The medium guns on their quarter decks would be much more effective than her carronades. But I was much struck with the manner of placing their shell-guns, which are 10-inch ; instead of being in the mid-ships, as in our vessels, they are fore and aft, four in the bow and four in the stern, on the gun and main decks, and by means of railways may be transferred from the broadside to the bow or stern, and back again immediately. The great advantage of this plan over ours must be obvious at first sight. In a general action, how often have ships been exposed to a severe raking fire, without being able to return it effectually ! But by the American plan they would be able to bring their formidable Paixhans to bear on an enemy in a few minutes, which would settle the matter much sooner than a few 32-pounders. As steamers will play an important part in all future naval warfare, the necessity of a ship being able to bring her Paixhan guns to bear at any point is obvious. Suppose one of our frigates chased by several steamers, and exposed to a continual fire of shells, without being able to return any, her speedy capture or destruction is inevitable ; for it is well known that a solid shot does little harm compared with shells. We have borrowed the principle of shell-guns from the French, and I hope we are not too proud to learn a better method of using them from the Yankees.— *United Service Magazine.*

CHRONOLOGY.

LONDON, Feb. 19. The ratifications of the different Powers which accede to the quintuple treaty, [see p. 180.] were exchanged. The French Government, however, had declined to ratify the treaty, in consequence of objections to it which had been raised in the Chamber of Deputies.

LONDON, March 11. Sir Robert Peel introduced his new revenue plan, which from its extent and boldness excited the greatest attention and interest. He began his speech by a statement of the existing revenue compared with the expenditures. He assumed the estimate of revenue for the year ending April 1843, at £48,350,000, and of expenditure at £50,819,000, leaving a deficiency of £2,469,000, beside a farther outlay demanded for the increased expenses of the war in China, which he estimated at not less than £500,000. The deficiency of the last five years, together with that of the current year to April, 1843, he estimated at £10,072,000.

He proceeded next to consider the mode in which this deficiency should be supplied. He rejected the idea of supplying it by contracting fresh debts, and also of laying farther taxes on articles of consumption, and came to the conclusion of relying chiefly on a direct tax on all incomes from land or any other source, where the amount of income accruing to each proprietor amounts to £150 a year or over. All incomes of less than that amount are to be exempt from the tax. The proposed rate of tax is 7*d.* on a pound, or nearly 3 per cent., and it is to be continued for three years, after which period it is hoped that the other revenues will be so far recruited by the ameliorations introduced, as to render the farther continuance of the direct tax unnecessary.

This tax is computed to produce £3,771,000 per annum, of which it is estimated £1,600,000 will be derived from rents, £150,000 from the profits by tenants of lands occupied, £646,000 on capital in the public funds, £1,220,000 on profits of trades and professions, and £155,000 on the incomes of all public officers, estimated at £700,000 annually, deducting in

each case from the estimated aggregate of income, one-fourth for incomes less than £150. He proposed also some increase on two or three other taxes, estimated to produce in all the additional sum of £610,000. Among these new taxes is an increased duty on spirits and stamps in Ireland, and an export duty of 4*s.* per ton on coal exported in national, as well as foreign ships. This last-named duty having been before limited only to exports in foreign ships, and removed also from those in all cases where treaties existed, adopting the principle of reciprocity, had become almost unproductive. With these accessions, the whole increase of income is estimated at £4,310,000, making a considerable surplus over the estimated expenditure. Sir Robert proceeded next to consider what disposition should be made of this surplus, in a manner most conducive to the public interests, and most consonant with public feeling and opinion. The mode in which he proposed to do this was, "by making great improvements in the commercial tariff of England," and abating the duties on some great articles of consumption. He said that in looking at the tariff he found it embraced not less than 1,200 articles, subject to various rates of duty. Each article had been subject to the most careful consideration of himself and his colleagues, and they proposed to make a complete review, and a great alteration of the tariff on general principles. He proposed first, to remove all prohibition. Next, to reduce the duty on raw materials to a great extent, leaving it in some cases merely nominal, for the purpose of statistical more than revenue objects, and in no case, or scarcely any, exceeding 5 per cent. on raw materials. Then on articles partly manufactured, to reduce the duty so that it shall not exceed 12 per cent.; and articles wholly manufactured, not to exceed 20 per cent.; specific exceptions being made to these general principles.

He said they had arranged the whole tariff under twenty heads, the first embracing living animals, and articles of food; the second spices; the third seeds;

the fourth, wood for furniture; the fifth, ores and other materials, for manufactures, etc. etc. This was the schedule above referred to. He said, that of 1,200 articles, they proposed to reduce the duty on 750, including all those which enter into manufactures as chief constituent materials. There remained about 450 articles, on which it did not appear necessary for the interests of commerce, or of consumers, to make any reduction of duty. There were other important articles, on which no reduction had been proposed, partly from considerations affecting the revenue exclusively, and partly on account of negotiations pending with many States in reference to commercial treaties, in which modifications of the tariff might be made for the reciprocal benefit of the negotiating parties. He alluded to the negotiations with several countries, and particularly to that with France, which had been nearly completed by his predecessor, and which he wished had been carried into effect, firmly believing that France and England would morally as well as physically have derived the greatest benefit from it. He was of opinion that there was an opportunity of materially benefitting the trade and industry of both countries by a relaxation of the duties, would the prejudices of the French people admit of it. While those treaties were pending, he would not recommend any material reduction in the duties on a number of articles, but reserved them to form the bases of negotiation, and as the means of obtaining corresponding relaxations in the tariffs of other countries. On this footing he considered the duty on French brandy and wines, and on various fruits. It was proposed that the change should take effect from the 5th of the present month of April.

The articles on which the greatest reductions of duty are proposed, are coffee and timber. The duty on coffee from foreign countries is proposed to be reduced from 1s. 3d. per lb. to 8d., and on that produced in British colonies, from 9d. to 4d.; and on timber, the very material reduction is made to £1 15s. for the first year, and £1 10s. subsequently, per load of 50 cubic feet, on deals, boards, staves, and other timber, sawed or split, when imported from foreign countries, and 2s. when from British possessions; and on other timber, £1 10s. the first year, and £1 5s. subsequently from foreign countries, and 1s. from British possessions. The reduction on coffee, it is computed,

will occasion a loss to the revenue of £170,000 per annum, and that on timber a loss of £600,000. These and other reductions, it is computed, will reduce the income in all £1,210,000. Many articles heretofore prohibited will now be admitted at rates of duty which will encourage their import. Among these are cattle, sheep, swine, fish, fresh beef, and pork. On a long list of articles the duty is reduced from rates which amounted to a prohibition, to such rates as will admit of a profitable trade. These will, of course, become a source of income to the treasury.

The proposed duty on beef and pork, fresh or salted, from foreign countries, is 8s. per cwt.; on butter, 20s.; cheese, 10s.; lard, 2s.; bacon and hams of all kinds, 14s.; rice, 5s.; rough do., 8s. per quarter; fish, cured, 2s.; horses and oxen, 20s. each; cows, 15s.; calves, 10s.; sheep, 2s.; swine, 5s.; hides, dry, 2s.; wet, 1s. per cwt.; tar, 6s. per last of 12 barrels; turpentine, cwt. 1s.; hemp, dressed, cwt. 4s.; tobacco, unmanufactured, lb. 3s.

March 18. The electrical eel at the Royal Adelaide Gallery died on Monday morning. It was well known to all the visitors. It had been ill for a week, but it was not until Thursday last, that there was any striking difference observable. It became very inactive, and this inactivity increased to torpor. The cause of its death was mortification. It was brought to this country from one of the many tributary streams of the river Amazon, about four years ago, and was the only one of its kind in Europe.

LONDON, March 30. NOTE OF LORD ABERDEEN to Mr. Everett, Minister Plenipotentiary of the U. States, in reply to the letter of Mr. Stevenson, on the subject of the search of vessels under the American flag, suspected of participation in the slave trade.

"The undersigned, &c. has the honor of addressing Mr. Everett, &c., the observations which he feels called upon to make in answer to the note of Mr. Stevenson, dated on the 21st of October.

"As that communication only reached the hands of the undersigned on the day after the departure of Mr. Stevenson from London, on his return to America, and as there has since been no Minister or Chargé d'Affairs from the United States resident in this country, the undersigned has looked with some anxiety for the arrival of Mr. Everett, in order that

he might be enabled to renew his diplomatic intercourse with an accredited representative of the Republic. Had the undersigned entertained no other purpose than to controvert the arguments of Mr. Stevenson, or to fortify his own, in treating of the matter which has formed the subject of their correspondence, he would have experienced little impatience; but as it is his desire to clear up doubt and to remove misapprehension, he feels that he cannot too early avail himself of the presence of Mr. Everett at his post, to bring to his knowledge the true state of the question at issue.

"The undersigned agrees with Mr. Stevenson in the importance of arriving at a clear understanding of the matter really in dispute. This ought to be the first object in the differences of states, as well as of individuals; and, happily, it is often the first step to the reconciliation of the parties. In the present case, this understanding is doubly essential, because a continuance of mistake and error may be productive of the most serious consequences.

"Mr. Stevenson persists in contending, that the British Government assert a right which is equivalent to the claim of searching American vessels in time of peace. In proof of this, Mr. Stevenson refers to a passage in a former note of Viscount Palmerston, addressed to himself, against which he strongly protests, and the doctrine contained in which he says the undersigned is understood to affirm.

"Now, it is not the intention of the undersigned to inquire into the precise import and force of the expressions of Viscount Palmerston. These might have been easily explained to Mr. Stevenson, by their author, at the time they were written; but the undersigned must request that his doctrines upon this subject, and those of the Government of which he is the organ, may be judged of exclusively from his own declarations.

"The undersigned again renounces, as he has already done, in the most explicit terms, any right on the part of the British Government, to search American vessels in time of peace. The right of search, except when specially conceded by treaty, is a purely belligerent right, and can have no existence on the high seas during peace. The undersigned apprehends, however, that the right of search is not confined to the verification of the nationality of the vessel, but also extends to the object of the voyage and the nature of

the cargo. The sole purpose of the British cruisers is to ascertain whether the vessels they meet with are really American or not. The right asserted has, in truth, no resemblance to the right of search, either in principle or practice. It is simply a right to satisfy the party who has a legitimate interest in knowing the truth that the vessel is what her colors announce. This right we concede as freely as we exercise. The British cruisers are not instructed to detain American vessels under any circumstances whatever; on the contrary, they are ordered to abstain from all interference with them, be they slavers or otherwise. But, where reasonable suspicion exists that the American flag has been abused for the purpose of covering the vessel of another nation, it would appear scarcely credible, had it not been made manifest by the repeated protestations of their representative, that the Government of the United States, which has stigmatized and abolished the trade itself, should object to the adoption of such means as are indispensably necessary for ascertaining the truth.

"The undersigned had contended, in his former note, that the legitimate inference from the arguments of Mr. Stevenson would practically extend even to the sanction of piracy, when the persons engaged in it should think fit to shelter themselves under the flag of the United States. Mr. Stevenson observes that this is a misapprehension on the part of the undersigned; and he declares, that in denying the right of interfering with vessels under the American flag, he intended to limit his objection to vessels bona fide American, and not to those belonging to nations who might fraudulently have assumed the flag of the United States. But it appears to the undersigned, that his former statement is by no means satisfactorily controverted by the declaration of Mr. Stevenson. How is this bona fide to be proved? Must not Mr. Stevenson either be prepared to maintain that the flag alone is sufficient evidence of the nationality of the vessel, which, in the face of his own repeated admissions, he cannot do, or must he not confess that the application of his arguments would really afford protection to every lawless and piratical enterprise?

"The undersigned had also expressed his belief, that the practice was general of ascertaining, by visit, the real character of any vessel on the high seas, against which there should exist reasonable

ground of suspicion. Mr. Stevenson denies this, and he asks what other nation than Great Britain has ever asserted or attempted to exercise such a right. In answer to the question, the undersigned can at once refer to the avowed and constant practice of the United States, whose cruisers, especially in the Gulf of Mexico, by the admission of their public journals, are notoriously in the habit of examining all suspicious vessels, whether sailing under the English flag or any other. In whose eyes are these vessels suspicious? Doubtless in those of the commanders of the American cruisers. But, in truth, this right is quite as important to the United States as to Great Britain; nor is it easy to conceive how the maritime intercourse of mankind could be safely carried on without such a check.

"It can scarcely be necessary to remind Mr. Everett, that the right thus claimed by Great Britain is not exercised for any selfish purpose. It is asserted in the interest of humanity, and in mitigation of the sufferings of our fellow men. The object has met with the concurrence of the whole civilized world, including the United States of America, and it ought to receive universal assistance and support.

"The undersigned cannot abstain here from referring to the conduct of an honorable and zealous officer, commanding the naval force of the United States on the coast of Africa, who, relying on the sincere desire of his government for the suppression of the slave trade, and sensible of the abuse of the American flag, entered into an engagement on the 11th of March, 1840, with the officers in command of her Majesty's cruisers on the same station, by which they mutually requested each other, and agreed to detain all vessels under American colors employed in the traffic. If found to be American property, such vessels were to be delivered over to the commander of an American cruiser on the station; or, if belonging to other nations, they were to be dealt with according to the treaties contracted by her Majesty with the respective states. The undersigned believes, and, indeed, after the statements of Mr. Stevenson, he regrets to be unable to doubt, that the conduct of this gallant officer, however natural and laudable in its object, has been disavowed by his government.

"It is not the intention of the undersigned, at present, to advocate the justice and propriety of the mutual right of search, as conceded and regulated by

treaty; or to weigh the reasons on account of which this proposal has been rejected by the Government of the United States. He took occasion in a former letter to observe, that concessions, sanctioned by Great Britain and France, were not likely to be incompatible with the dignity and independence of any other state which should be disposed to follow their example. But the undersigned begs now to inform Mr. Everett, that he has this day concluded a joint treaty with France, Austria, Russia, and Prussia, by which the mutual right of search, within certain latitude, is fully and effectually established for ever. This is, in truth, a holy alliance, in which the undersigned would have rejoiced to see the United States assume their proper place among the great powers of Christendom, foremost in power, wealth, and civilization, and connected together in the cause of mercy and justice.

"It is undoubtedly true, that this right may be abused, like any other which is delegated to many and different hands. It is possible that it may be exercised wantonly and vexatiously; and should this be the case, it would not only call for remonstrance, but would justify resentment. This, however, is in the highest degree improbable; and if, in spite of the utmost caution, an error should be committed, and any American vessel should suffer loss or injury, it would be followed by prompt and ample reparation. The undersigned begs to repeat that, with American vessels, whatever be their destination, British cruisers have no pretension in any manner to interfere. Such vessels must be permitted, if engaged in it, to enjoy a monopoly of this unhallowed trade; but the British Government will never endure that the fraudulent use of the American flag shall extend the iniquity to other nations, by whom it is abhorred, and who have entered into solemn treaties with this country for its entire suppression.

"In order to prove to Mr. Everett the anxiety of her Majesty's government to prevent all reasonable ground of complaint, the undersigned believes that he cannot do better than to communicate to him the substance of those instructions, under which the British cruisers act, in relation to American vessels, when employed on this service.

"If, from the intelligence which the officer commanding her Majesty's cruiser may have received, or from the manœu-

vres of the vessel or from other sufficient cause, he shall have reason to believe, that, although bearing the American flag, the vessel does not belong to the United States, he is ordered, if the state of the wind and weather shall admit of it, to go ahead of the suspected vessel, after communicating his intention by hailing, and to drop a boat on board of her to ascertain her nationality, without detaining her if she shall prove to be really an American vessel. But, should this mode of visiting the vessel be impracticable, he is to require her to be brought to for this purpose. The officer who boards the vessel is merely to satisfy himself of her nationality, by her papers or other proofs, and, should she really be an American vessel, he will immediately quit her, offering, with consent of her commander, to note on her papers the cause of suspecting her nationality, and the number of minutes she was detained, (if detained at all,) for the object in question. All the particulars are to be immediately entered into the log-book of the cruiser, and a full statement of them to be sent by the first opportunity direct to England.

"These are the precautions taken by her Majesty's Government against the occurrence of abuse in the performance of this service; and they are ready to adopt any others which they may think more effectual for the purpose, and which shall, at the same time, be consistent with the attainment of the main object in view.

"Mr. Stevenson has said, that he had no wish to exempt the fraudulent use of the American flag from detection, and this being the case, the undersigned is unwilling to believe that a Government like that of the United States, professing the same object, and animated by the same motives as Great Britain, should seriously oppose themselves to every possible mode by which their own desire could be really accomplished.

"Foreign Office, Dec. 20, 1841."

PERU AND BOLIVIA. We have not for some months published any details of the disorders now wasting these unhappy republics. After the suppression of the revolution of Vivanco, (*Mon. Chron.* Vol. II. p. 325.) the exertions of Santa Cruz in the northern provinces also proved unsuccessful, and he attempted to retire into Bolivia, with a view of raising that republic against Gamarra in Peru.

Gamarra did not hesitate to undertake a campaign against the feeble state of Bo-

livia. He took with him General Ballivan, an exile from that republic, whose pretensions to the Presidency he intended to support in opposition to those of Santa Cruz. The Bolivians, alarmed at his approach, invited Ballivan to assume the reins of government, which he did, and immediately turned his arms against his late friend and protector.

Soon after, Ballivan, at the head of four thousand men, by a forced march got into the rear of Gamarra,—that is, between him and Peru,—attacked him by surprise, and between treachery and panic the Peruvians were speedily put to the rout, with a loss of 500 killed, 322 wounded, and some 3,000 prisoners. Gamarra was shot by his own troops, and buried on the field of battle by Ballivan. The loss of the Bolivians was trifling.

After this Ballivan invaded Peru in turn, and rapidly gained possession of the southern provinces.

In the meantime Santa Cruz had departed from Guayaquil in an English merchant vessel, and effected a landing on the coast of Bolivia, whence he advanced to Cobija, the only seaport of that republic, but finding it in possession of the Peruvians, he fled again to Guayaquil, where he remained when last heard from. Subsequently the Peruvians abandoned Cobija.

CHRISTIANA. (Norway.) Feb. 25. The royal speech at the opening of the Storting, was read by the Right Statholder of Norway, and it left nothing to regret but the absence of the king. We are aware, that this absence is to be attributed only to the rare phenomenon which has this year deprived us of sleighing, by driving away to the south of France, and even to Algeria, the masses of snow which should naturally have fallen among us. We know, also, that the king is as much disappointed as we. The exposition of the administration of the kingdom affords proofs of the regular progressive prosperity which the last royal discourse promised us. In the front of the happy results of the constant solicitude of the government, is what concerns the public instruction. The number of schools of every kind is increased; an institution has been specially designed for furnishing masters for all the schools; funds are provided for rewarding the discovery of the best modes of instruction, and for printing scientific and classical books. The ecclesiastical chest, destined

to defray the expense of the instruction of the people, and the encouragement of agriculture, possessed at the end of 1840 a sum of 1,320,000 specie rix dollars.

The increase of commerce, navigation, and various branches of industry, affords results not less satisfactory. The export of herring amounted to an average, in the 3 last years, of 779,000 tons; that of fish oil, 41,000; that of planks exceeded 260,000 lasts per annum. The number of vessels from foreign ports in 1839 was 7,332, and in 1840, 7,707. The value of houses insured against fire has progressively increased from 17,000,000 to 26,000,000 dollars. The mine of Königsberg continues to enrich the state to the amount of 200,000 specie dollars per annum. The public debt amounts at the present time to only 2,800,000 specie dollars, and the state has 2,000,000 on hand, or to its credit. We are on the point of being able to liquidate the whole of our public debt, and meet the expenses of the state for the ensuing three years, without the necessity of reestablishing the land tax, from which we have been exempt since 1836.

NEW GRENADA, March 1. Under this date President Herran announces, that the recent rebellions are at an end, and that tranquillity is restored. Obando [see *Mon. Chron.* Vol. II. p. 466] was some time since defeated in the southwest, and President Herran's operations against the rebels on the northern seacoast have at length proved successful. We infer, however, that he does not intend to include Panama among the provinces reconciled to the central government.

PARIS, March 20. **THE FRENCH COINAGE.** The silver pieces of 15 and 30 sous, those of six liards, and those of two sous bearing the letter N, (coined in the Hundred Days,) and the copper and bell-metal pieces of one and two liards, of one and five centimes, and of one decime, (two sous,) are to be called in. The latter are to be replaced by a bronze coin, composed of copper and alloy, of one, two, and five centimes, and one decime each. The bronze money about to be issued will amount to 40,000,000 of francs. The silver pieces of 25 centimes (five sous,) are to be likewise withdrawn from circulation, and pieces of 20 centimes to be substituted in their stead. This operation will cost the state, according to the Ministerial valuation, a sum of 13,703,000 francs.

BERLIN, March 21. The Prussian State Gazette gives the following statistical

table of the quantity of raw iron annually produced in Europe: Great Britain, 29,632,000 quintals; France, 6,763,900; Russia, including the Ural Provinces, 3,820,000; Belgium, 2,917,350; that part of Germany comprehended in the Customs' Union, 2,550,762; the part not included in the Union, 143,500; Austrian monarchy, 1,820,000; Sweden, 1,455,245; Sardinia, 245,000; Tuscany, 120,000; Parma, 28,000; Modena and Naples, 15,000; Spain, 250,000; Poland, 184,000; Norway, 107,420; Luxembourg, 60,000; Switzerland, 14,000; Portugal, 8,400. The bar iron taken immediately from the mines may be estimated at 236,565 quintals.

TEXAS. Since the publication of the last Number of the Chronicle, intelligence has been received of a Mexican invasion of Texas, which has excited great interest in the southwestern States. Accounts of the numbers of the Mexican force vary greatly, from 2 to 20,000 men. There seems to be a full determination, however, on the part of the Government of Texas, to raise as large a force as possible to defend the country, and retaliate by attacking Mexico. Considerable bodies of volunteers have gathered in the southwestern States for the assistance of the Texans.

DOMESTIC.

RHODE ISLAND. The Constitution prepared for this state by the regular authority having been rejected by a small majority of the people, (*Mon. Chron.* Vol. III. p. 145,) the government still existed under the old form, and the friends of the "Suffrage" or "People's" Constitution felt emboldened to proceed farther in their measures. It must be understood, that on the question of the acceptance of the authorized State Constitution, which, as we have said, was rejected, all persons were permitted to vote, who would be voters under its provisions, that is, all white male citizens of the United States, who should have resided two years in Rhode Island. This constitution had been rejected by the votes of the supporters of the unauthorized constitution, of those who thought blacks should vote, and also of such of the adherents to the old charter form of government as were opposed to any change.

On the rejection of this instrument, and as the period appointed by the Suffrage Constitution for the election approached,

the General Assembly resolved on decisive measures for sustaining the legal authority. They passed a series of resolutions declaring their purpose to maintain the existing constitution and laws, and passed an act, declaring it a misdemeanor, punishable with fine and imprisonment, to serve as presiding officer or clerk of any town or ward meeting for the choice of officers under the pretended constitution, and still heavier penalties for consenting to be a candidate for office under the said constitution. To accept and to attempt to exercise the functions of office under the said constitution, was declared to be treason, punishable by imprisonment for life.

In accordance with one of these resolutions of the General Assembly, Gov. King, on the 4th of April, issued a proclamation admonishing all faithful citizens to yield no allegiance to the pretended authority of the other new constitution, and enjoining on all officers of the state to be firm and vigilant in detecting and bringing to punishment all persons concerned in attempting to carry it into effect.

In order to have a sufficient force in preparation for the enforcement of the requisitions of this proclamation, general orders were issued the same day, calling on the members of all the chartered military companies in the State to be ready for service at thirty minutes' warning.

The leaders of the so called " Suffrage Constitution " party, paid little heed to these documents, but nominated a ticket for their election on the 18th, and occupied themselves in procuring pledges and drilling troops for the support of their constitution.

Both parties sent messengers to Washington, calling for the interference of the General Government. In reply, the President addressed an official letter to Governor King, in which he informs the Governor of Rhode Island, that in any interposition in which he may be called on to make between the Government of a State, and any portion of its citizens who may assail it with violence, or may be in actual insurrection against it, he can only look to the Constitution and laws of the United States, which plainly declare the obligations of the Executive Department, and leave it no alternative as to the course it shall pursue.

He quotes the provision of the constitution which makes it the duty of the United States to guaranty to every State in

the Union a republican form of government, and to protect each of them against invasion, and against domestic violence. He quotes also the acts of Congress of Feb. 28, 1795, and March 3, 1807, which prescribe the duties of the President of the United States, in case of " an insurrection in any State against the government thereof." He then proceeds to state the view which he takes of his duty in the present exigency, and in such as has been apprehended may occur, of actual insurrection against the government of Rhode Island, in the following terms :

" By a careful consideration of the above recited acts of Congress, your Excellency will not fail to see, that no power is vested in the Executive of the United States to anticipate insurrectionary movements against the government of Rhode Island, so as to sanction the interposition of the military authority ; but that there must be an actual insurrection manifested by lawless assemblages of the people or otherwise, to whom a proclamation may be addressed, and who may be required to betake themselves to their respective abodes. I have, however, to assure your Excellency, that should the time arrive, and my fervent prayer is that it may never come, when an insurrection shall exist against the Government of Rhode Island, and a requisition shall be made upon the Executive of the United States, to furnish that protection which is guaranteed to each State by the Constitution and laws, I shall not be found to shrink from the performance of a duty, which, while it would be the most painful, is at the same time the most imperative. I have also to say, that in such a contingency, the Executive could not look into real or supposed defects of the existing government, in order to ascertain whether some other plan of government proposed for adoption was better suited to the wants and more in accordance with the wishes of any portion of her citizens. To throw the Executive power of this government into any such controversy, would be to make the President the armed arbitrator between the people of the different States and their constituted authorities, and might lead to an usurped power, dangerous alike to the stability of the State Governments and the liberties of the people. It will be my duty, on the contrary, to respect the requisitions of that government which has been recognized as the existing Government of the State through all time past, until I shall be advised in

regular manner, that it has been altered and abolished and other substituted in its place, by legal and peaceable proceedings, adopted and pursued by the authorities and people of the State."

The President proceeds to express his conviction, that no contingency will arise which will render the interference of the National Government necessary, and that the people of Rhode Island, so long distinguished for their love of order, will not rush into revolution for the redress of grievances, real or supposed.

This decision of the General Government, in which, as it appeared, the whole Cabinet concurred, somewhat damped the ardor of the great mass of the "Suffrage" party. Several of their candidates declined serving on their ticket, which had been made up with some difficulty in the first instance, as there were few prominent men who cared to make themselves more prominent by assuming the danger and responsibility as well as the fame of attaching themselves to a revolutionary movement of this nature.

The election under this new instrument was held, however, on the 18th of April. Although the right of suffrage, which it grants is almost unlimited, and although the number of votes given for it when proposed for adoption was said to be more than 12,000, [Mon. Chron. Vol. III. p. 46.] little more than half that number (6,359) voted under it at its first election.

Two days after, on the 20th, the regular election under the charter being held, 7,080 persons voted, Governor King being reelected by a decided majority. The return of this number of votes of persons who still recognized the charter as the supreme law, shows, in comparison with the vote first mentioned, a decided majority against the revolution-born constitution; particularly as the charter admits but a limited right of suffrage.

These are the latest movements; there are, of course, two sets of officers elect of Rhode Island.

RICHMOND, (Va.) March 26. The Legislature adjourned sine die, after passing 224 acts. It had refused to receive the share of the proceeds of the public lands, which, under the distribution law would fall to the state. It left the State finances in some confusion, but passed, notwithstanding, a bill, granting a loan of \$250,000, of six per cent. State stock, to the James River and Kanawha Company, to enable them to pay off their temporary

loans and post notes, and to redeem their pledged bonds, on a pledge of all the resources of the Company.

ROCHESTER, (N. Y.) March 31. James Sheridan Hogan, supposed to have been engaged in the attack on the steamboat *Caroline*, [see Mon. Chr. Vol. III p. 142,] having again crossed the frontier, was a second time arrested and subjected to examination, on a charge of participation in causing the death of Amos Durfee. After an examination before the proper authorities, he was discharged, on the 5th of April, for want of testimony to justify his detention.

It was understood that the object of his visit was a love affair; that he is engaged to be married in June next, to a young lady on the American side of the lines.

WASHINGTON, (D. C.) April 4. Lord Ashburton, the special British Minister, who has been expected for some weeks, arrived and took possession of the residence provided for him. The *Warspite* frigate, in which his Lordship crossed the Atlantic, arrived at Annapolis on the 2d, after a passage of 45 days from the Isle of Wight.

On the 5th, Lord Ashburton called at the Department of State, and on the 6th he was presented to the President, and delivered his official letter from the Queen. He entered at once upon the business of the mission, spending three hours with the Secretary of State on the 6th.

April 5. The new steam frigate *Mississippi* arrived at the Navy Yard. The *Missouri* and *Mississippi* sailed from New York on the 1st. The distance by water between the two cities is about 600 miles. The *Missouri* in going up the Potomac, by an error of the pilot, ran aground. Every effort was immediately made to get her off, and in the course of these exertions, the launch and life-boat were sent out lashed together with an anchor and sixty fathoms of heavy chain, for the purpose of heaving her off. Unfortunately, as they were preparing to drop anchor, the chain cable broke loose from its stoppers, and carried two boats down with it. Lieutenant Borden, with seventeen persons of the crews of these boats, was unfortunately lost; several of them being severely injured by the chain, and this number being drowned before they could receive assistance. Eleven others were saved by boats from the frigate. The vessel was got afloat on the 7th, without injury, after lightening her, and by the

assistance of the Mississippi in towing her off the bank.

HARTFORD, April 4. The State election took place this day. Governor Ellsworth was the Whig candidate for re-election, and Chauncey F. Cleveland was the Democratic candidate. There were also two other candidates, one supported by a small party called Conservatives, and the other by abolitionists. There was no choice of Governor, but the highest number of votes was obtained by Mr. Cleveland, and nearly sufficient to make a choice. The Democratic party obtained a majority of members, in both branches of the legislature. In many towns, in consequence of the large number of votes given by persons supporting a third, and even a fourth party, there was no choice of Representatives.

NEW YORK, April 12. The charter election in this city resulted in the re-election of Robert H. Morris as Mayor, by nearly 2,000 majority over Mr. Phenix, the Whig candidate. In the Common Council, nine Whigs and eight Democrats were chosen to each board.

In Albany, the election was held on the same day. Dr. Staats, the Democratic candidate, was chosen by 2,861 votes, over Mr. Townshend, who had 2,262. In the Board of Aldermen, 11 Democrats and 9 Whigs were chosen.

ALBANY, April 12. The Legislature of New York adjourned after a session of 98 days, in which it passed 323 laws. The act of greatest general interest was that imposing a tax to meet the interest of the State debt, and stopping all farther operations in the construction of the public works of internal improvement. There will be an extra session in August.

COLUMBIA. (S. C.) April 12. A desolating fire broke out this morning, at 1 o'clock, and burned until daylight, consuming the most beautiful and the principal business part of Columbia. Twenty-nine stores and dwellings, with numerous out-buildings, are in ruins. The loss in buildings and goods cannot fall much short of \$200,000.

SAG HARBOR, (L. I.) April 14. The Havre packet Louis Philippe went on shore and was entirely lost. She had on board a hundred passengers, all of whom with the crew were saved.

BALTIMORE, April 14. The new and splendid steamboat Medora, which was just finished, was to make a trial excursion from Baltimore on this day. About

one hundred persons were on board by invitation of the directors, the day being fine, and a pleasant trip anticipated. The engine had not, however, made its second revolution in backing the boat from the wharf, when the boiler exploded with great noise, carrying with it a considerable portion of the upper deck, and throwing the smoke stacks into the air. The main force of the explosion was almost exclusively toward the head of the boat, and the portions of the boat around the boiler were torn to pieces. The boiler itself, an immense one of iron, was thrown crosswise on the deck.

The boat was instantly enveloped in a cloud of scalding steam, which was inhaled by some with fatal consequences, while others suffered externally in their persons from its effects. Our informant was in the after part of the boat, where the steam had no injurious effect. He states that several persons jumped overboard, and that one of them was drowned. The boat immediately settled in the water until her hull rested on the bottom of the river.

In the centre and forward part of the boat, there was a fearful destruction of life and limb. Some of those on board were blown high in the air, and fell on shore, in the water, and on the boats lying near by. Others were crushed with the splintered timbers; others scalded with the steam; while those below the decks, not having time to escape, were either suffocated by the steam, or drowned when the boat sunk.

Twenty-three persons were killed, or died shortly afterwards of their wounds, and many more were severely wounded and scalded, some of them dangerously. The cause of the explosion was stated to be the placing of an additional weight upon the safety valve, by a person not entrusted with the management of the engine.

PROVIDENCE, April 20. The regular election under the old constitution was held throughout Rhode Island this day. Governor King was re-elected by a large majority, and also the Whig candidates of the Senate, together with a large number of Whigs to the House of Representatives.

ALBANY, April 20. The enlarged canal was opened this day from Albany to the Lower Aqueduct, a distance of about 14 miles. Two boats, with parties on board, including the acting commissioner for the

eastern section, the comptroller, and other public officers, departed from the Lower Aqueduct for Albany. The company, before their departure, examined the Lower Mohawk Aqueduct, which crosses the river on 26 arches of substantial and well finished masonry. The span of each arch is 37 1-2 feet, the entire length of the aqueduct 1,140 feet, and its width 40 feet. It was begun in 1838, and is now just finished at a cost of \$315,000. It is the largest aqueduct in America, and is a fine specimen of workmanship. There are on this section of the canal 18 new locks, 17 of which are double, of 10 feet, 10 feet 8 inches, and 11 feet 3 inches lift each. The average cost of the locks was \$75,000 each. One of the most remarkable works of masonry is the Lower Side Cut, at West Troy. It is of beautiful masonry of massive stone, and is of 22 feet lift. Its cost was \$107,000. There is another aqueduct, 220 feet in length, between Cohoes and Watervliet. The party who passed through this section of the canal in celebration of the opening, were met along the whole line by the assembled population, who greeted them with enthusiastic cheers.

AUGUSTA, (Maine,) April 29. Governor Fairfield, in consequence of the "extraordinary occasion" arising from the state of negotiations respecting the north-eastern boundary of the state, issued his proclamation, requiring the members of the legislature to assemble in special session on the 18th of May, for the purpose of deliberating and deciding upon such matters as should be then submitted for their consideration.

NEW YORK, April 30. The British W. I. steam-packet *Medway*, arrived at this port yesterday at 3 o'clock P. M. from the West Indies, and sailed for Halifax this day at noon. She left Havana on the morning of the 21st inst., and arrived at Nassau on the afternoon of the 22d, making the passage between the two places in about 29 hours. She left Nassau early on the morning of the 23d; was in Savannah the 25th, and in Charleston 26th. Officers and passengers landed at Savannah, but not in Charleston.

The following are the dimensions of this vessel:

Length from figure head to taffrail,	245 ft.
Length of keel,	213 "
" of spar deck,	223 " 10 in.
Breadth of beam,	36 "
" to outside of paddle	

boxes,	59
" of wheels,	8 " 06 in.
Depth,	23 " 03 in.
Height of spar deck,	7 "
Diameter of wheels,	32 "
Diameter of cylinder,	6 " 03 in.
Tonnage, old measure,	1,300 tons.

She makes sixteen revolutions per minute, and usually runs about 11 1-2 miles per hour.

She will return to Havana by way of New York, Savannah, and Nassau, and leave Havana for England on the 1st June next, via Nassau, Bermuda, and Fayal.

UNITED STATES CONGRESS.

Our latest dates from Washington are to the 25th of April

On the 21st of March, Mr. Giddings of Ohio offered in the House of Representatives a series of resolutions, which he professed to think were required as an expression of opinion in the Creole case. They declared that slavery, although recognized by the constitution in those States whose own constitutions admitted it, did not exist under the jurisdiction of the United States, as a confederated body, and consequently ceased at sea; and that the course taken by the negroes of the Creole was justifiable on this ground, for that slavery, being an abridgment of natural right, could only exist by positive municipal statute.

The resolutions excited the greatest indignation with a large part of the members of the House; they were considered as intended only to produce useless excitement on subjects of the highest importance and greatest delicacy. This feeling immediately manifested itself in the House, and Mr. Giddings, on this account apparently, withdrew his resolutions. A resolution of censure was presented immediately, blaming him for introducing, under such circumstances, such resolutions, which, as was said, besides their tendency to unnecessary excitement, "justified and approved murder and mutiny, in terms shocking to all sense of law, order, and humanity."

The previous question was ordered on this resolution of censure, and all debate was thus cut off. Mr. Giddings refused to make any defence, unless his right to do so were conceded, declining to take advantage of the general consent of all parts of the House to his proceeding to

defend himself. The resolution accordingly passed, without discussion, 125 to 69.

Mr. Giddings the next day resigned his seat in Congress, intending, however, to offer himself immediately as a candidate for reelection.

The debate on the Loan Bill, [Mon. Chron. p. 144.] continued through the month of March. On the 25th, the President sent a message to Congress, pressing the necessity of some immediate action on it, and recommending that the proceeds of the sales of public lands be pledged to the repayment of the loan, in order that capitalists might be induced to take it more readily. This proposition, however, met but little favor in Congress. The House rejected an amendment which embodied it, and on the 1st of April, the bill passed that body.

Having gone to the Senate, it passed that body on the 13th of April, 26 to 18, after a few amendments, which were subsequently acquiesced in by the House. The debate on this bill, and the fate of amendments moved in each House, showed the opposition of both Houses to a repeal or suspension of the land distribution act.

The debate in the Senate on Mr. Clay's finance resolutions, [Mon. Chron. Vol. III. p. 144.] which were offered, as will be remembered, merely in order to obtain an expression of the opinion of the Senate, closed on the 30th. Two of the resolutions were adopted: one declaring that the General Government should have an adequate revenue to meet its ordinary expenses in time of peace; and the other declaring that it was the duty of the Government to abolish all useless institutions and officers, to curtail all unnecessary expenses, and practice rigid economy; the rest were appropriately committed.

On the 31st of March, Mr. Clay, in presenting the credentials of his successor, Mr. Crittenden, took leave of the Senate in an eloquent address, in which he alluded to the long term of his public service, which was now apparently drawing to a close; and expressed his fervent hope, that the Senate might continue to carry out the great objects for which it was instituted, and promote by its deliberations the honor and prosperity of the country.

The House, having disposed of the loan bill, resumed the consideration of the appropriation bill, [Mon. Chron. Vol. III. p. 144.] the progress of which was still very slow, from the constant debate on separate items, on which members thought retrenchment might be made. On the 20th of April, the bill having been taken from Committee of the Whole, passed the House.

The Apportionment Bill was next considered, providing for the ratio by which the number of Representatives of the several States in Congress for the next ten years should be decided. By the last action of the House on this subject which has reached us, a ratio of 60,500 for a member was fixed upon. This ratio gives eight more members than the present House contains; the several States being entitled under it, to the number of members given in the annexed list:

Maine,	8 Georgia,	9
New-Hampshire,	4 Alabama,	8
Massachusetts,	12 Mississippi,	4
Rhode Island,	1 Louisiana,	4
Connecticut,	5 Tennessee,	12
Vermont,	4 Kentucky,	11
New York,	40 Ohio,	25
New Jersey,	6 Indiana,	11
Pennsylvania,	28 Illinois,	7
Delaware,	1 Missouri,	5
Maryland,	7 Arkansas,	1
Virginia,	17 Michigan,	3
N. Carolina,	10	
S. Carolina,	7	250

On the 4th of April, Mr. Saltonstall from the Committee on Manufactures, presented the tariff bill which it had agreed upon. No action has as yet been taken by Congress upon it, and we reserve a sketch of it until we have to mention the debates upon it.

WAR IN AFFGHANISTAN. The most striking and disastrous event in the history of the last year, is the overthrow and destruction of the British military force in Affghanistan. We have prepared a narrative of this melancholy tragedy, with a brief history of the British occupation of Affghanistan, which on account of its length is necessarily postponed to the next Number.